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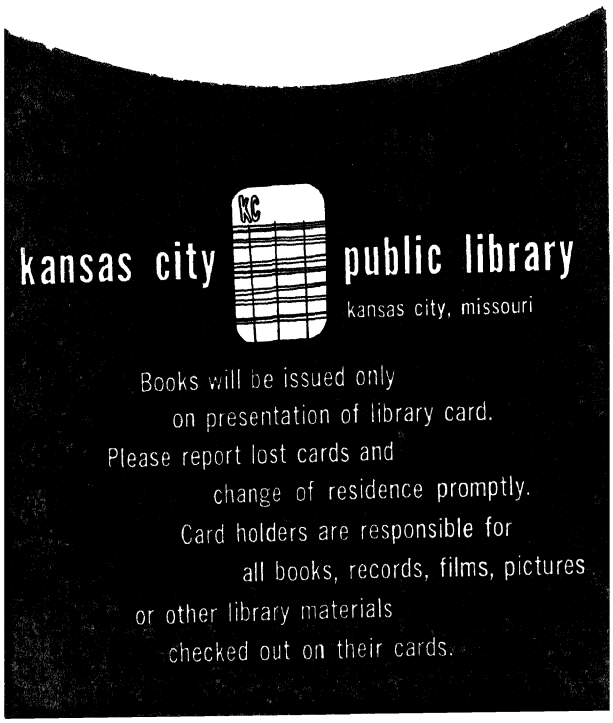

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ARCHITECTURE: NINETEENTH AND TWENTIETH CENTURIES

HENRY-RUSSELL HITCHCOCK

HENRY-RUSSELL HITCHCOCK

ARCHITECTURE
NINETEENTH AND TWENTIETH CENTURIES

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(C) L.-E. Boullée: Project for City Hall, *c.* 1785 (H. Rosenau)

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4 (A) Sir John Soane: London, Bank of England, Governor's Court, 1803 (F. R. Yerbury)
(B) C. F. Hansen: Copenhagen, Vor Frue Kirke, 1811–29 (Kongelige Bibliotek, Copenhagen)

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(B) A.-T. Brongniart and others: Paris, Bourse, 1808–15 (R. Viollet)

9 (A) Friedrich Gilly: Project for monument to Frederick the Great, 1797 (F. Stoedtner)
(B) Leo von Klenze: Munich, Glyptothek, 1816–30 (F. Kaufmann)

10 (A) Friedrich Weinbrenner: Karlsruhe, Marktplatz, 1804–24 (Staatliches Amt für Denkmalpflege, Karlsruhe)
(B) Friedrich von Gärtner: Munich, Ludwigskirche and Staatsbibliothek, 1829–40 and 1831–40 (from an engraving by E. Rauch)

11 (A) Heinrich Hübsch: Baden-Baden, Trinkhalle, 1840 (H. Kuhn)
(B) Wimmel & Forsmann: Hamburg, Johanneum, 1836–9 (E. Gorsten)

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13 K. F. von Schinkel: Berlin, Altes Museum, 1824–8

14 (A) K. F. von Schinkel: Potsdam, Court Gardener's House, 1829–31
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(B) L.-H. Lebas: Paris, Notre-Dame-de-Lorette, 1823–36 (Archives Photographiques – Paris)

19 J.-B. Lepère and J.-I. Hittorff: Paris, Saint-Vincent-de-Paul, 1824–44 (from *Paris dans sa splendeur*)

20 Douillard Frères: Nantes, Hospice Général, 1832–6 (from Gourlier, *Choix d'édifices publics, III*)

21 H.-P.-F. Labrouste: Paris, Bibliothèque Sainte-Geneviève, 1843–50 (Bulloz)

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(B) Antonio Niccolini: Naples, San Carlo Opera House, 1810–12 (Alinari)

24 Raffaelle Stern: Rome, Vatican Museum, Braccio Nuovo, 1817–21 (D. Anderson)

25 A. de Simone: Caserta, Royal Palace, Sala di Marte, 1807 (Alinari)
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98 E.-E. Viollet-le-Duc: St-Denis, Seine, Saint-Denys-de-l'Estrée, 1864–7 (Archives Photographiques – Paris)
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112 (A) C. R. Cockerell: Liverpool, Bank Chambers, 1849 (J. R. Johnson)

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113 E. W. Godwin: Bristol, 104 Stokes Croft, *c.* 1862 (N.B.R.)

114 (A) Peter Ellis: Liverpool, Oriel Chambers, 1864–5 (N.B.R.)

(B) Lockwood & Mawson (?): Bradford, Yorkshire, Kassapian's Warehouse, *c.* 1862 (N.B.R.)

115 (A) George B. Post: New York, Western Union Building, 1873–5 (Courtesy of Museum of the City of New York)

(B) Burnham & Root and D. H. Burnham & Co.: Chicago, Reliance Building, 1890, 1894 (Chicago Architectural Photographing Co.)

116 (A) H. H. Richardson: Hartford, Conn., Brown–Thompson Department Store (Cheney Block), 1875–6

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118 Adler & Sullivan: St Louis, Wainwright Building, 1890–1 (Bill Hedrich, Hedrich-Blessing)

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122 (A) J. B. Papworth: 'Cottage Orné', 1818 (from *Rural Residences*, plate XIII)

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123 R. Norman Shaw: nr Withyham, Sussex, Leyswood, 1868 (from *Building News*, 31 March 1871)

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(B) H. H. Richardson: Cambridge, Mass., Stoughton house, 1882–3 (from Sheldon, *Artistic Country Seats*, 1)

125 (A) McKim, Mead & White: Elberon, N.J., H. Victor Newcomb house, 1880–1 (from *Artistic Houses*, 2, Pt 1)

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131 (A) Baron Victor Horta: Brussels, Solvay house, 1895–1900 (Archives Centrales Iconographiques, Brussels)

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132 (A) C. R. Mackintosh: Glasgow, School of Art, 1897–9 (T. & R. Annan)

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180 Henry Bacon: Washington, Lincoln Memorial, completed 1917 (Horydczak)
181 Sir Edwin Lutyens: Delhi, Viceroy's House, 1920–31 (Copyright Country Life)
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(B) Lúcio Costa: Rio de Janeiro, blocks of flats, Parque Guinle, 1948–54 (R. T. McKenna)

188 Eero Saarinen: Warren, Mich., General Motors Technical Institute, 1951–5 (Ezra Stoller)

189 Oscar Niemeyer: Pampulha, São Francisco, 1943 (M. Gautherot)

190 (A) Philip C. Johnson: New Canaan, Conn., Boissonas house, 1955–6 (Ezra Stoller)

(B) Osvaldo Arthur Bratke: São Paulo, Morumbí, Bratke house, 1953 (R. T. McKenna)

191 Skidmore, Owings & Merrill (Gordon Bunshaft): New York, Lever House, 1952 (Ezra Stoller)

192 Vegas & Galia: Caracas, Edificio Polar, 1953–4 (R. T. McKenna)

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H.-R. H.

INTRODUCTION

THE round numbers of chronology have no necessary significance historically. Centuries as cultural entities often begin and end decades before or after the hundred-year mark. The years around 1800, however, do provide a significant break in the history of architecture, not so much because of any major shift in style at that precise point as because the Napoleonic Wars caused a general hiatus in building production. The last major European style, the Baroque, had been all but dissolved away in most of Europe. The beginnings of several differing kinds of reaction against it – Academic in Italy, Rococo in France, Palladian in England – go back as far as the first quarter of the century; shortly after the mid century there came a more concerted stylistic revolution.

In the forty years between 1750 and 1790 the new style that is called 'Romantic Classicism'[1] took form, producing by the eighties its most remarkable projects, and even before that some executed work of consequence in France and in England. Thus the nineteenth century could inherit the tradition of a completed architectural revolution, and at its very outset was in possession of a style that had been fully mature for more than a decade. The most effective reaction against the Baroque in the second, and even to some extent the third, quarter of the eighteenth century had taken place in England; the later architectural revolution that actually initiated Romantic Classicism centred in France.

Yet Paris was not the original locus of the new style's gestation but rather Rome.[2] From the early sixteenth century Rome had provided the international headquarters from which new ideas in the arts, by no means necessarily originated there, were distributed to the Western world. To Rome came generation after generation of young artists, connoisseurs, and collectors to form their taste and to formulate their aesthetic ideals. Some even settled there for life. From the time of Colbert the French State maintained an academic establishment in Rome for the post-graduate training of artists. Thus French hegemony in the arts of the late seventeenth and early eighteenth centuries was based on a tradition maintained and renewed at Rome. The nationals of other countries came to Rome more informally, and were for the most part supported by their own funds or by private patrons; only in the seventies were young English architects of promise first awarded travelling studentships by George III. In the fifties the number of northern architects studying in Rome notably increased; some of them, beginning with the Scot Robert Mylne (1734–1811) in 1758, won prizes in the competitions held by the Roman Academy of St Luke.

The initiation of Romantic Classicism was by no means solely in the hands of architects. In the mid-century period of Roman gestation, Winckelmann, Gavin Hamilton, and Piranesi – a German archaeologist, a Scottish painter, and a Venetian etcher – played significant roles, as well as various architects, some *pensionnaires* of the French Academy, others Britons studying on their own. Certain aspects of Romantic Classicism

are already boldly presaged in the etchings of G. B. Piranesi (1720–78), not the projects in his *Prima parte di architettura* of 1743 or the plates of ruins in his *Antichità romane* of 1748 but his fanciful *Carceri* that appeared in the late 1740s. On the theoretical side the *Essai sur l'architecture* of the French Abbé M.-A. Laugier (1713–70), which appeared in 1753 with a second edition following in 1755, had something of real consequence to contribute as a basic critique of the dying Baroque style. In simple terms Laugier may be called both a Neo-Classicist and a Functionalist. The bolder functionalist ideas of an Italian Franciscan Carlo Lodoli (1690–1761) as presented by Francesco Algarotti in his *Lettere sopra l'architettura*, beginning in 1742, and in his *Saggio sopra l'architettura* of 1756 were also influential. However, despite all the new archaeological treatises inspired by the Roman milieu, of which the first was the *Ruins of Palmyra* published in 1753 by Robert Wood (1717–71), and all the excavations undertaken at Herculaneum over the years 1738–65 and those at Pompeii beginning a decade later, the first architectural manifestations of Romantic Classicism did not occur on Italian soil.

Two buildings begun in the late 1750s, one a very large church in France completed only in 1790, the other a mere garden pavilion in England, may be considered to announce the architectural revolution: Sainte-Geneviève in Paris, desecrated and made a secular Panthéon in 1791 immediately after its completion, was designed by J.-G. Soufflot (1713–80);[3] the Doric Temple at Hagley Park in Worcestershire is by his exact contemporary James Stuart (1713–88). Soufflot was, significantly, a pupil of J.-N. Servandoni (1695–1760), a French-born but Italian-trained architect – the latter's design of 1733 for the front of Saint-Sulpice in Paris had already provided a major example of Classical reaction against the Baroque in the middle of the Rococo period. Born and partly trained in Lyons, Soufflot studied early in Rome and returned to Italy again in the middle of the century. Like several of the French theorists of the day, he had had a lively interest in Gothic construction from his Lyons days. He owed his selection to design Sainte-Geneviève in 1755 to his friendship with Louis XV's Directeur Général des Bâtiments, the Marquis de Marigny, brother of Mme de Pompadour, whom he had accompanied to Italy in 1749 along with the influential critics C.-N. Cochin and the Abbé Leblanc.

The Scottish architect James Stuart had also gone to Rome, and formed there as early as 1748 the project of visiting Athens; by 1751 he was on his way, accompanied by Nicholas Revett (*c.* 1721–1804), with whom he proposed to produce an archaeological work on the *Antiquities of Athens*. The publication of the first volume of this epoch-making book was delayed until 1762. In the meantime, in 1758, the year Stuart designed his Hagley temple, J.-D. Leroy (1724–1803) got ahead of him by publishing *Les Ruines des plus beaux monuments de la Grèce*; but the very pictorial and inaccurate plates in this were of little practical use to architects.

The significance of Stuart's temple may be readily guessed; small though it is, this fabrick was the first example of the re-use of the Greek Doric order [4] – so barbarous, or at least so primitive, in appearance to mid-eighteenth-century eyes – and the first edifice to attempt an archaeological reconstruction of a Greek temple. By the fifties many architects and critics were ready to accept the primacy of Greek over Roman art, if not

the necessity for imitating its monuments so closely. With no knowledge of Greek architecture at all, Félibien, Cordemoy, and Laugier in France had praised it; and in Germany J. J. Winckelmann had even recommended the use of Greek rather than Roman models in his *Gedanken über die Nachahmung der Griechischen Werke* (Dresden, 1755) published just before he settled in Rome.[5]

Out of Italian chauvinism Piranesi attacked the theory of Grecian primacy in the arts; yet before his death he had prepared an impressive and influential set of etchings of the Greek temples at Paestum which his son Francesco published. In 1760, moreover, Piranesi decorated the Caffè Inglese in Rome in an Egyptian mode. Eventually Greek precedent in detail all but superseded Roman for nearly a generation; yet a real Greek Revival, at best but one aspect of Romantic Classicism, hardly matured until after 1800. There was never a real Egyptian Revival,[6] but Egyptian inspiration played some part in crystallizing the formal ideals of Romantic Classicism all the same; it also provided certain characteristic architectural forms, such as the pyramid and the obelisk, and occasional decorative details.

Soufflot's vast cruciform Panthéon provides no such simple paradigm as Stuart's temple. No longer really Baroque, it is by no means thoroughly Romantic Classical. Like most of the work of the leading British architect of Soufflot's generation, Robert Adam (1728–92),[7] the Panthéon must rather be considered stylistically transitional. For example, the purity of the temple portico at the front, in any case Roman not Grecian, is diminished by the breaks at its corners. The tall, hemispherical dome [8] over the crossing is even less antique in character, owing its form to Wren's St Paul's rather than to the Roman Pantheon, which was the favourite domical model for later Romantic Classicists. In the interior, up to the entablatures, the columniation is Classical enough and the structure entirely trabeated [9] – at least in appearance (Plate 1). Above, the saucer domes in the four arms are Roman, but hardly the pendentives that carry them; these are, of course, a Byzantine structural device revived in the fifteenth century by Brunelleschi. Over the aisles the cutting away of the masonry and the general statical approach, while not producing anything that *looks* very Gothic, illustrate the results of Soufflot's long-pursued study of Gothic vaulting. Many aspects of nineteenth-century architectural development were thus presaged by Soufflot here, as will become very evident later (see Chapters 1–3, 6, and 7).

The Panthéon was finally finished in the decade after Soufflot's death by his own pupil Maximilien Brébion (1716–*c.* 1792), J.-B. Rondelet (1734–1829), a pupil of J.-F. Blondel, and Soufflot's nephew (François, ? – *c.* 1802). Well before that, a whole generation of French architects had developed a mode, similar to Adam's in England, which is usually called, despite its initiation long before Louis XV's death in 1774, the *style Louis XVI*. Whether or not this mode in its inception owed much to English inspiration is still controversial. In any case it was widely influential outside France from the seventies to the nineties, and in those decades both French-born and French-trained designers were in great demand all over Europe, except in England; and even in England French craftsmen were employed. With that completely eighteenth-century phase of architectural history this book cannot deal, even though most of the architects who

designed for Napoleon the chief public monuments of Paris just after 1800 had first made their reputation under Louis XVI, or even earlier under Louis XV. The *style Louis XVI* and the English 'Adam Style' were over, except in remote provinces and colonial dependencies, by 1800.

In various executed works of the decades preceding the French Revolution it is possible to trace the gradual emergence of mature Romantic Classicism in France, as also to some extent in the executed buildings and, above all, the projects of the younger George Dance (1741–1825) [10] in England. But it is in the extraordinary designs, dating from the eighties, by two French architects a good deal younger than Soufflot that the new ideals were most boldly and completely visualized. In the last twenty-five years these two men, L.-E. Boullée (1728–99) and C.-N. Ledoux (1736–1806), have increasingly been recognized as the first great masters of Romantic Classical *design* if not, in the fullest sense, the first great Romantic Classical *architects*. Boullée built little and few of his projects and none of the manuscript of his book on architecture, both now preserved at the Bibliothèque Nationale, were published – or at least not until modern times.[11] Yet they must have been well known to his many pupils – including J.-N.-L. Durand, who was the author of the most influential architectural treatise of the Empire period, and doubtless to others as well (see Chapters 2 and 3).

Ledoux was from the first a very successful architect, working with assurance and considerable versatility in the *style Louis XVI* from the late sixties, particularly for Mme du Barry. He became an academician and *architecte du roi* in 1773 and spent the next few years at Cassel in Germany. His major executed works are in France, however, and belong to the late seventies and eighties. These are the Besançon Theatre of 1775–84, the buildings of the Royal Saltworks at Arc-Senans near there of 1775–9 – he had been made *inspecteur* of the establishment in 1771 – and the *barrières* or toll-houses of Paris, which were built in 1784–9 just before the Revolution. In this later work most of the major qualities of his personal style, qualities carried to much greater extremes in his projects, are readily recognizable; his earlier work was of rather transitional character and not at all unlike what many other French architects of his generation were producing.

The massive cube of the exterior of Ledoux's Besançon Theatre, against which an unpedimented Ionic portico is set, can already be found, however, at his Château de Benouville begun in 1768; the later edifice is nevertheless much more rigidly cubical and much plainer in the treatment of the rare openings. In the interior Ledoux substituted for a Baroque horseshoe with tiers of boxes a hemicycle [12] with rising banks of seats and a continuous Greek Doric colonnade around the rear fronting the gallery. The extant constructions at Arc-Senans are less geometrical; instead of Greek orders there is much rustication and also various Piranesian touches of visual drama. It was this commission which set Ledoux to designing his 'Ville Idéale de Chaux'; that was his greatest achievement, even though it never came even to partial execution, nor could perhaps have been expected to do so, so cosmic was the basic concept.

The *barrières* varied very widely in character; some were very Classical, others in a modest Italianate vernacular; some were rather Piranesian in their bold rustication,

others as plain and flat in their forms as the cubic block of the Besançon Theatre. The most significant, however, were notable for the crisp and rigid geometry of their flat-surfaced masses. The extant Barrière de St Martin in the Place de Stalingrad in the La Villette district of Paris consists of a tall cylinder rising out of a very low, square block; this is intersected by a cruciform element projecting as four pedimented porticoes beyond the edges of the square (Plate 2A). Although the range of Ledoux's restricted detail here is not very great, it is varied to the point of inconsistency all the same. The rather heavy piers of the porticoes are square, with capitals simplified from the Grecian Doric; yet around the cylinder extends an open arcade of Italian character carried on delicate coupled columns.

Had Ledoux's ideas been known only from his executed work, he would probably not have been especially influential; certainly he would not have attained with posterity the very high reputation that is his today. Inactive at building after the Revolution – he was even imprisoned for a while in the nineties – he concentrated on the publication of his designs both executed and projected. His book *L'Architecture considérée sous le rapport de l'art, des mœurs et de la législation* appeared in 1804, and a second edition was published by Daniel Ramée (1806–87) in 1846–7. This book has a long and fascinating text which is sociological as much as it is architectural; but it is in its plates, both of executed work and projects, that Ledoux's originality can best be appreciated. By no means all of his ideas, known before the Revolution to his pupils and undoubtedly to many others as well, passed into the general repertory of Romantic Classicism; some of the most extreme are hardly buildable. The 'House for Rural Guards' is a free-standing sphere, a form that he utilized as space rather than mass in the interior of a project for a Columbarium. For the 'Coopery', the coopers' products dictated the target-like shape (Plate 2B). The 'House for the Directors of the Loue River' is also a cylinder set horizontally, but a much more massive one, through which the whole flood of the river was to pour to the thorough discomfort, one would imagine, of the inhabitants. Even where the forms are more conventional, as in the project for the church of his 'Ville Idéale' of Chaux – a purified version of Soufflot's Panthéon: cruciform, temple-porticoed, and with a Roman saucer dome – or for the bank there – a peristylar rectangle with high, plain attic, flanked at the corners by detached cubic lodges – the clarity and originality, of his formal thinking is very evident, and was apparently influential well before his book actually appeared in 1804. Masses are of simple geometrical shapes, discrete and boldly juxtaposed; walls are flat and as little broken as possible, the few necessary openings mere rectangular holes. Minor features are repeated without variation of rhythm in regular reiterative patterns; the top surfaces of the masses, whether flat, sloping, or rounded, are considered as bounding planes, not modelled plastically in the Baroque way.[13]

Much of this is common to the projects of Boullée, more widely known than Ledoux's in the eighties because of his many pupils. The simple geometrical forms, the plain surfaces, the reiterative handling of minor features, all are even more conspicuous in his designs and generally presented at a scale so grand as to approach megalomania (Plate 2C). Boullée could be, and often was, more conventionally the Classical Revivalist than Ledoux; he was also perhaps somewhat less bold in using such shapes as the sphere

and the cylinder, if rather more addicted than Ledoux to the cube and the pyramid. His inspiration was on occasion medieval (of a very special South European 'Castellated' order), and he thereby laid the foundations for that more widely eclectic use of the forms of the past which makes the Romantic Classical a syncretic style, not a mere revival of Roman or Greek architecture. Various projects of the eighties by younger men, such as Bernard Poyet (1742–1824) and L.-J. Desprez (1743–1804), of whom we will hear again later, were of very similar character.

Both Boullée and Ledoux, but particularly Ledoux, were interested in symbolism. In that sense their architecture was not essentially abstract, despite the extreme geometrical simplicity of their forms, but in their own term *parlante* or expressive and meaningful. So special and personal is most of their symbolism, however, that even when quite obvious, as with the 'Coopery', it was hardly viable for other architects. When Ledoux gave to his *Oikema* or 'House of Sexual Education' an actual *plan* of phallic outline (which would be wholly unnoticeable except from the air) he epitomized the hermetic quality of much of his architectural speech. It is understandable that, of the many who accepted his architectural syntax, very few really attempted to speak his language. Such symbolism belonged on the whole to an early stage of Romantic Classicism; after 1800 architectural speech was generally of a much less recondite order. Yet to each of the different vocabularies employed by Romantic Classicists – Grecian, Egyptian, Italian, Castellated, etc. – some sort of special meaning was commonly attached. Thus a restricted and codified eclecticism provided, as it were, the equivalent of a system of musical keys that could be chosen according to a conventional code when designing different types of buildings.

One cannot properly say that international Romantic Classicism derives to any major degree from Ledoux and Boullée; one can only say that their projects of the eighties epitomized most dramatically the final ending of the Baroque and the crystallization of the style that succeeded it. Many French architects of the generation of Poyet and Desprez, however, such as J.-J. Ramée, Pompon, A.-L.-T. Vaudoyer, L.-P. Baltard, Belanger, Grandjean de Montigny, Damesme, and Durand (to mention only those whose names will recur later) came close to rivalling even the grandest visions of Ledoux and Boullée in projects prepared in the nineties.[14] After such exalted work on paper, the buildings actually executed by this generation of Romantic Classicists often seem rather tame. So also were the glorious social schemes of the political revolutionaries much diluted by the functioning governments of Consulate and Empire before and after 1800.

Only in England did the decades preceding the French Revolution produce any development in architecture at all comparable in significance to what was taking place then in France. But there also it is the projects rather than the executed work of Dance – of which very little remains except his early London church of All Hallows, London Wall, of 1765–7 – that modern investigators have come to realize led most definitely away from the transitional 'Adam Style' towards Romantic Classicism. His Piranesian Newgate Prison, begun in 1769, was demolished in 1902. By 1790, both in France and in England, the new ideas had taken firm root, however, and other countries were not slow to accept the mature style once it had been fully adumbrated.

The fact that the nineteenth century began with much of Europe under the hegemony of a French Empire does not quite justify calling the particular phase of Romantic Classicism with which the nineteenth century opens *Empire*, although this is frequently done in most European countries. Yet the prestige of Napoleon's rule, and indeed its actual extent, ensured around 1800 the continuance of that French leadership in architecture which had started a century earlier under Louis XIV. Beyond the boundaries of Napoleon's realm and the lands of his nominees and his allies, moreover, French émigrés carried the revolutionary architectural ideas of the last years of the monarchy – they were almost all revolutionaries in the arts, although like Ledoux politically unacceptable to the leaders of the Revolution in France. Even in the homeland of Napoleon's principal opponents, the English, the prestige of French taste, high in the eighties, hardly declined with the Napoleonic wars. The mature Romantic Classicism of England in the last decade of the old century and the first of the new is certainly full of French ideas, even though it is not always clear exactly how they were transmitted across the Channel in war-time.

If Romantic Classicism, the nearly universal style with which nineteenth-century architecture began, was predominantly French in origin and in its continuing ideals and standards, the same decades that saw it reach maturity also saw the rise of another major movement in the arts that was definitely English. The 'Picturesque', a critical concept that had been increasing in authority for two generations in England, received the dignity of a capital P in the 1790s. The term Romantic Classicism is a twentieth-century historian's invention, attempting by its own contradictoriness to express the ambiguity of the dominant mode of this period in the arts; the term Picturesque, on the other hand, was most widely used and the concept most thoroughly examined just before and just after 1800 (see Chapters 1 and 6).

To the twentieth century, on the whole, the aesthetic standards of Romantic Classicism – or perhaps one should rather say the visual results – have been widely acceptable. The results of the application of Picturesque principles in architecture, on the other hand, have not been so generally admired; indeed, until lately the more clearly and unmistakably buildings realized Picturesque ideals, the less was usually the esteem in which they were held by posterity. On the whole, in architecture if not in landscape design, the twentieth century has preferred to see the many manifestations of the Picturesque around 1800 as aberrations from a norm considered primarily as a 'Classical Revival'. As the adjectival aspect of the term Romantic Classicism makes evident, however, the Classicism of the end of the eighteenth century and the beginning of the nineteenth was not at all the same as that of the High Renaissance, nor even that of the Academic Reaction of the early and middle decades of the eighteenth century. Romantic Classicism tends not so much towards the 'Beautiful', in the sense of Aristotle and the eighteenth-century aestheticians, as towards what had been distinguished by Edmund Burke in 1756 as the 'Sublime'.

Posterity has admired in the production of the first decades of the nineteenth century a homogeneity of style which is in fact even more illusory than that of earlier periods. Horrified by the chaos of later nineteenth-century eclecticism, two twentieth-century

generations, opposed in almost every other aspect of taste, have praised architects and patrons of the years before and after 1800 for a consistency that was by no means really theirs. In some ways, and not unimportant ways, the history of architecture within the period covered by this volume seems to come full circle so that the Austrian art historian Emil Kaufmann could in 1933 write a book entitled *Von Ledoux bis Le Corbusier*. Kaufmann did not live quite long enough to realize how far from the spheres and cubes of the Ledolcian ideal the revolutionary twentieth-century architect would move in these last years (see Chapter 23). Le Corbusier's Chapelle de Ronchamp, completed in 1955 after Kaufmann's death, seems more in accord with extreme eighteenth-century illustrations of the Picturesque than with characteristic monuments of Romantic Classicism (Plate 167). Yet in the early works of the American Frank Lloyd Wright in the 1890s and those of the German Mies van der Rohe twenty years later a filiation to early nineteenth-century Classicism can be readily traced; that tradition informed almost the entire production of the French Perret, a good deal of that of the German Behrens, and even some of the best late work of the Austrian Wagner (see Chapters 18–21).

Forgetting for the moment the Picturesque, one may profitably set down here some of the characteristics that the aspirations and the achievements of the architects of 1800 share, or seem to share, with those of the architects of over a century later. The preference for simple geometrical forms and for smooth, plain surfaces is common to both, though the earlier men aimed at effects of unbroken mass and the later ones rather at an expression of hollow volume. The protestations of devotion to the 'functional' are similar, if as frequently sophistical in the one case as in the other. The preferred isolation of buildings in space is as evident in the ubiquitous temples of the early nineteenth century as in the towering slabs of the mid twentieth. Monochromy and even monotony in the use of homogeneous wall-surfacing materials and the avoidance of detail in relief is balanced in both periods by an emphasis on direct structural expression, whether the structure be the posts and lintels of a masonry colonnade or the steel or ferro-concrete members of a continuous space-cage. Finally, impersonality and, perhaps even more notably, 'internationality' of expression provided around 1800 a universalized sense of period rather than a sense of particular nation or region, just as they have done in the last thirty years.

The full flood of Romantic Classicism came late, having been dammed so long by the political and economic turmoil of the last years of the eighteenth century and the first of the nineteenth; it also continued late, in some areas even beyond 1850. But dissatisfaction and revolt also started early; it is not a unique stylistic paradox that the greatest masters of Romantic Classicism were often those who were also most ready to explore the alternative possibilities of the Picturesque (see Chapter 6). The architectural production of the first half of the nineteenth century cannot therefore be presented with any clarity in a single chronological sequence. Parallel architectural events, even strictly contemporary works by the same architect, must be set in their proper places in at least two different sequences of development.

The building production of the early decades of the century already divides only too easily under various stylistic headings. A Greek Revival, a Gothic Revival, etc., have

often been assumed, indeed, to possess individual vitality; in fact, these and other 'revivals' were but aspects either of the dominant Romantic Classical tide or of the Picturesque countercurrent (see Chapters 1–5 and Chapter 6, respectively). Only the story of the increasing exploitation of new materials, notably iron and glass, reaching some sort of a culmination around 1850, lay outside, though never quite isolated from, the realm of the revivalistic modes (see Chapter 7).

PART ONE

1800–1850

CHAPTER I

ROMANTIC CLASSICISM AROUND 1800

DESPITE the drastically reduced production of the years just before and after 1800, between the outbreak of the French Revolution and the culmination of Napoleon's imperial career, there are prominent buildings in many countries that provide fine examples of Romantic Classicism in its early maturity; others, generally more modest in size, give evidence of the vitality of the Picturesque at this time. Since England and America were least directly affected by the French Revolution, however much they were drawn into the wars that were its aftermath, they produced more than their share, so to say, of executed work. French architects before 1806 were mostly reduced to designing monuments destined never to be built or to adapting old structures to new uses.

The greatest architect in active practice in the 1790s was Sir John Soane (1753–1837), from 1788 Architect of the Bank of England. The career of his master, the younger Dance, was in decline; he had made what were perhaps his greatest contributions a good quarter of a century earlier. Whatever Soane owed to Dance, and he evidently owed him a great deal, the Bank [1] offered greater opportunities than the older man had ever had. His interiors of the mid nineties at the Bank leave the world of academic Classicism completely behind (Plate 3). His extant Lothbury façade of this date, with the contiguous 'Tivoli Corner' of a decade later – now modified almost beyond recognition – and even more the demolished Governor's Court (Plate 4A) showed that his innovations in this period were by no means restricted to interiors.

Soane's style, consonant though it was in many ways with the general ideals of Romantic Classicism, is a highly personal one. At the Bank, however, he was not creating *de novo* but committed to the piecemeal reconstruction of an existing complex of buildings, and controlled as well by very stringent technical requirements. Thus the grouping of the offices about the Rotunda, like the plan of the Rotunda itself, goes back to the work done by his predecessor Sir Robert Taylor (1714–88) twenty years earlier; while the special need of the Bank for various kinds of security made necessary both the avoidance of openings on the exterior and a fireproof structural system within. The architectural expression that Soane gave to his complex spaces in the offices which he designed in 1792 and built in 1794 had very much the same abstract qualities as those to which older masters of Romantic Classicism, such as Ledoux and Dance, had already aspired in the preceding decades (Plate 3). The novel treatment of the smooth plaster

Various European capitals, however, imitating Napoleon III's re-organization of Paris, took advantage of the clearing away of their fortifications to lay out something equivalent to the *grands boulevards*. Florence during the late sixties, for example, when it was very briefly the capital of Italy, saw the laying out, according to the general plan of Giuseppe Poggi (1811–1901), of a range of avenues and squares that extend around the city to the east, north, and west on the site of the old walls. These districts, built up over the years 1865–77, display little or none of the new Second Empire afflatus. For the most part everywhere in Italy in this period the architecture is of generically Renaissance revival character. Only in the much later Piazza della Repubblica, carved out of the slummy heart of the old city in 1887–95, is there a heavy pomposity of scale that is curiously un-Florentine – the centre of nineteenth-century Athens might be Neo-Greek, but it was Munich, not Florence, that became characteristically Neo-Tuscan!

In the old Savoy capital of Turin, where the first half of the century had seen such notable urbanistic projects, a vigorous local tradition continued to control most of the new work.[21] However, at the farther side of the Piazza Carlo Felice the Porta Nuova Railway Station was built in 1866–8 by the engineer Alessandro Mazzuchetti (1824–94) and the architect Carlo Ceppi (1829–1921) in a rather original sort of *Rundbogenstil*. The vast iron and glass lunette at the front still provides a handsome termination to the long axis of the Via Roma, although the rear of the station has been rebuilt since the War. Along the Corso Vittorio Emmanuele II the earlier arcades of Promis were continued almost indefinitely; but the detailing of the façades grew continually richer in evident emulation of Second Empire Paris. This influence also affected the building up of the contiguous quarter of the city. In the fine new square at the end of the Via Garibaldi, however, balancing the earlier Piazza Vittorio Veneto at the end of the Via Po, the Piazza dello Statuto opened in 1864, the façades by Giuseppi Bollati (1819–69) are not at all Parisian, but recall rather the local Academic Baroque of Juvara. Especially effective, and rare in Turin, are the warm and tawny colours of the painted stucco walls here.

With the uniting of Italy and the eventual taking over of Rome as the capital of the kingdom of Italy on the downfall of Napoleon III in 1870, a tremendous expansion [22] of the old Papal city began. The two principal new streets extending eastward, the Via Venti Settembre and the Via Nazionale, were laid out in 1871 and built up over the next fifteen years. Vast and tawny-coloured like the Piazza dello Statuto in Turin, but much less distinguished in design, is the Finance Ministry in the former street built by Raffaelle Canevari (1825–1900) in 1870–7. Equally grand in scale and much more dignified are the quadrantal façades of the Esedra built by Gaetano Koch (1849–1910) in 1885 at the head of the Via Nazionale facing Michelangelo's Santa Maria degli Angeli (Plate 76A). With the splendid fountain by Guerrieri in the centre of the Esedra this provides a most impressive piece of late-nineteenth-century academic urbanism. It still offers a not altogether unworthy preface to the Baths of Diocletian – of which it actually occupies the site of the largest exedra – and to the new railway station (Plate 183B), both so near, which epitomize between them the ancient and the modern worlds in the architecture of Rome.

Koch's Palazzo Margherita in the Via Vittorio Veneto, now the American Embassy, built in 1886–90, is also very dignified. It represents very well the occasional tendency in that decade towards restraint and sobriety in Renaissance design, a tendency that balances the contemporary stylistic development towards the Neo-Baroque. In the Via Nazionale the two most prominent edifices [23] by Italian architects, the Palazzo delle Belle Arti of Pio Piacentini (1846–1928) begun in 1882 and Koch's Banca d'Italia of 1889–1904, are rather similarly academic in a most respectable way, and in the latter case impressively monumental as well. The same applies *a fortiori* to the two principal public edifices begun in Rome in the eighties – not the respectability, goodness knows, but the monumentality. The enormous Palazzo di Giustizia, in a new quarter across the Tiber, is an incredibly brash example of Neo-Baroque loaded down with heavy rustication, doubtless of Piranesian inspiration. This curious (and happily unique) structure was designed by Giuseppe Calderini (1837–1916) in 1883–7 and built in 1888–1910.

But the most overpowering new structure in Rome, dominating the whole city and blocking the view of both the ancient Forum and the Renaissance Campidoglio, is the Monument to Victor Emmanuel II, rising above the much enlarged Piazza Venezia at the head of the Corso. Largely the work of Count Giuseppe Sacconi (1854–1905),[24] who in 1884 won the third competition held for its design, this was begun in 1885 and continued after his death by Koch, Piacentini, and M. Manfredi (1859–1927), being finally completed only in 1911 by Armando Brasini (b. 1879) and A. Raffaelli. Hardly Second Empire, nor yet quite 'Beaux-Arts', this most pretentious of all nineteenth-century monuments well illustrates the total decadence of inherited standards of Classicism in Europe towards the end of the century. It can be compared only with Poelaert's Palace of Justice in Brussels, begun twenty years earlier, and entirely to the latter's advantage even as regards mere gargantuan assurance.

In general, Italian production of the second half of the century is of relatively slight interest; moreover, it often seriously upsets the balance of earlier urban entities by its heavy scale. The great exception, and the one ranking Italian work of the period, is generally recognized to be the Galleria Vittorio Emmanuele II in Milan. In Genoa, behind the theatre, the Galleria Mazzini of 1871 also exceeds in length, in height, and in elaboration all the galleries and passages built in various European cities in the first half of the nineteenth century, yet it is not essentially very different from them in its scale or its detailing. The vast cruciform Galleria in Milan, however, extending from the Piazza del Duomo to the Piazza della Scala, with a great octagonal space at the crossing, is in concept and in its actual dimensions more a work of urbanism than of architecture (Plate 75B). Built with English capital by an English firm, the City of Milan Improvement Company Ltd, and even, presumably, with some English professional advice – M. D. Wyatt was a member of the English board – this tremendous project more than rivals the greatest Victorian railway stations of London in the height, if not the span, of its metal-and-glass roof. But the actual designing architect was Italian, Giuseppe Mengoni (1829–77), and the Galleria de Cristoforis provided him with at least a modest local prototype. Erected in 1865–77 and now completely restored to its pristine richness and elegance, the Galleria scheme involved the enlargement of the Piazza del Duomo and

the lining of two of its sides with related façades – executed only partly from Mengoni's designs – as also the regularization of the Piazza della Scala. Alessi's sixteenth-century Palazzo Marini, itself of almost Second Empire lushness, was enlarged to serve as the offices of the municipality and provided with a new façade in Alessi's extremely Mannerist style across one side of the square facing La Scala. This was carried out in 1888–90 by Luca Beltrami (1854–1933), who had studied in Paris at the École des Beaux-Arts, to serve as municipal offices.

Like all the other most prominent buildings of this period, Mengoni's Galleria makes its impression by its size, its elaboration of detail, and above all its unqualified assurance. From the triumphal-arch portal, rising as high as the nave of the medieval Duomo, to the gilded arabesques of the pilasters, all is obvious, expensive, and rather parvenu; yet the setting – at once so comfortable and so magnificent – that it provides for urban life, centre as it has always remained of so much Milanese activity, has not been equalled since.[25] The Galleria Umberto I in Naples is a late and rather inferior imitation whose ornate entrance most ungenerously overpowers Niccolini's San Carlo Theatre across the street. This was built by Emmanuele Rocco in 1887–90.

After Paris the most extensive and sumptuous example of the re-organization of a great city carried out in this period is not in Italy but in Austria. Vienna had been relatively inactive architecturally in the first half of the nineteenth century under Francis I (see Chapter 2). His successor Francis Joseph, however, who came to the throne in 1848, set out in the following decades as *Kaiser* and *König* to see that his Imperial and Royal capitals should rival Napoleon III's Paris. In 1857 the fortifications surrounding the old city of Vienna were removed, and the following year Ludwig Förster (1797–1863) won the competition for the layout of the Ringstrasse that was to take their place. The execution of this project, with many modifications, took some thirty years (Plate 74). Outside the actual walls there had been a wide glacis, and therefore the Ring could be developed not merely as a series of wide tree-lined boulevards like those of Paris but with large open spaces in which major public buildings were grouped. These edifices are even more various in style than the comparable ones in Paris, despite the fact that they were the work of a very closely knit group of architects. None of them is of specifically Second Empire character, though the high mansards and the pavilion composition of the New Louvre were used fairly frequently on private buildings in Vienna and throughout the Austro-Hungarian Empire.

The earliest major project of Francis Joseph was the construction of the Arsenal, begun in 1849, where most of the leading architects of the period worked (see Chapter 2). All in various versions of the *Rundbogenstil*, this group of buildings culminates in the centrally placed Army Museum of 1856–77 by Förster and his Danish son-in-law Theophil von Hansen (1813–91). On this the very ornate detail is Byzantinesque and Saracenic in inspiration, yet it is not without a distinctive flavour that is unmistakably of this particular period: the brilliant polychromy of the red and yellow brick walls almost seems to echo, like Vaudoyer's Marseilles cathedral, the bolder effects of the contemporary High Victorian Gothic architects of England.

Ferstel's bank in the Herrengasse of 1856–60, also *Rundbogenstil*, has been mentioned

earlier. The North Railway Station of 1858–65 by Theodor Hoffmann was *Rundbogenstil* of an even more ornate sort, with only a rather modest iron-and-glass-roofed shed set between its two massive masonry blocks. This was badly damaged by bombing in the last War but not totally destroyed. On the other hand, the South Station, built in 1869–73 by Wilhelm Flattich (1826–1900), a pupil of Leins in Stuttgart, was of rather conventional High Renaissance character.

The typical and, one may suppose, the preferred stylistic vehicle of most Viennese architects in these decades was, indeed, a rather rich High Renaissance mode. This, for example, Hansen used very effectively for the Palace of Archduke Eugene of 1865–7 and for the Palais Epstein at 1 Parlamentsring of 1870–3. He and Förster, working sometimes alone and sometimes together, as well as many other architects, employed this mode ubiquitously for various big blocks of flats along the Ring and elsewhere (Plate 74). Good examples are such new hotels of the period as the former Britannia, still standing in the Schillerplatz, and the Donau, which once rose opposite the North Station. Both are by Heinrich Claus (1835–?) and Josef Grosz (1828–?) and were built in the early seventies. Their rather Barryesque raised end-pavilions, without mansards, and the heavily sumptuous detailing of the façades are most characteristic. The better known Sacher's Hotel behind the Opera House, built by W. Fraenkel in the mid seventies, is somewhat smaller and less lush. The block at 8 Operngasse, built by Ehrmann in the early sixties, was topped with Parisian mansards, as are also the long blocks in the Reichstrasse behind the Parlament and the University on either side of the Rathaus; these also have open arcades at their base somewhat like those in Turin.

As along the boulevards of Paris, there is a considerable homogeneity in the private architecture that lines the Ring and the many squares and streets that were built up at the same time. Only in the design of public monuments – often by much the same architects, it is worth noting – did a pompous and somewhat retardataire eclecticism rule. Consider the major works of Ferstel: his bank is *Rundbogenstil*; his Votivkirche of 1856–79 is Gothic; his University something else again.

Ferstel's Gothic must be compared, not with the distinctly original High Victorian churches of its period in England (see Chapter 10), but with Gau's earlier Sainte-Clotilde in Paris (see Chapter 6): it is certainly a considerable improvement over that in the general justness of the scale and the plausible laciness of the fourteenth-century detail. But in English terms the Votivkirche is still Early rather than High Victorian. The painted decoration by J. Führich and others, somewhat more discreet than that in the chief *Rundbogenstil* churches of Vienna, relieves effectively the coldness usual in these big Continental examples of Neo-Gothic.

Ferstel's much later University of 1873–4, which stands next door to his church and balances Hansen's precisely contemporaneous Grecian Parlament (see Chapter 2), is a richly plastic pavilioned composition of generically Renaissance character. It also has a high convex mansard over the central block like those on the New Louvre, a feature echoed on the Justizpalast in the Schmerlingplatz, built by Alexander Wielemans (1843–1911) after the University in 1874–81. So much for the main works of one

leading architect of the period. Not all Ferstel's contemporaries had quite so varied a stylistic repertory, however.

In Vienna, as in Paris, one of the most conspicuous and also one of the most successful and original of the new public buildings was the Opera House. This was built in 1861–9 by Van der Nüll & Siccardsburg in a mode quite unrelated to their earlier work at the Arsenal but one not easy to define. The Vienna Opera House is a somewhat simpler and less boldly plastic structure than Garnier's, both in its generally right-angled massing, with pairs of rectangular wings projecting on each side towards the rear, and in the rather flat, somewhat *François I* detail. Yet the vast curved roof, actually rather like that over the buildings along the Rue de Rivoli, does give it a distinctly Second Empire air (Plate 74). Less grandly sited than the Paris Opéra, it was none the less balanced across the Opernring by one of the largest and handsomest of Hansen's private works, the Heinrichshof of 1861–3 (Plate 73B). This had a fine glass-roofed passage through its centre and ranges of flats behind the elaborate Late Renaissance façades. It has unfortunately been demolished since the War to make way for a very poor modern block of offices.

Here by the Opera House, as at the Place de l'Opéra in Paris, the Viennese urban achievement of the age was concentrated. The Heinrichshof, with its raised central portion matching the high roof of the Opera House opposite and its corner towers corresponding to the mansarded pavilions of more definitely French-styled blocks of flats, offered a handsomer Austrian equivalent of the Second Empire mode than does the Opera House itself; for the Opera House lacks externally the lushness and bombast characteristic of the period at its most assured, while the auditorium within, re-opened in 1955, is today a much simplified post-War reconstruction by Boltenstern. Yet the masonry exterior of the Opera House is clean and fresh today thanks to Boltenstern's restoration and, with the great staircase and foyer regilded and refurbished generally, it offers a lighter and more festive vision of the period than do the vast majority of Viennese buildings whose stucco so often badly needs a coat of paint.

Hansen's Musikvereinsgebäude of 1867–9 in the Dumbagasse is academic in an almost eighteenth-century way, both as regards the general organization of the exterior and the restraint of the detailing. In his still later Parlament of 1873–83, as has been noted earlier, he produced the last grandiose monument of the Greek Revival. More characteristic, however, is his contemporaneous Academy of Fine Arts of 1872–6 in the Schillerplatz. This is externally in the Renaissance mode that he presumably preferred after he left Athens, but it has Grecian detailing inside of a delicacy and elegance that recalls the thirties. Especially handsome is the colonnaded Aula in the centre, even though its rich painted ceiling of 1875–80 by Anselm Feuerbach is inappropriately Baroque in a rather Rubens-like way.

Another Austrian architect besides Ferstel was using Gothic for prominent Viennese edifices in this period (see also Chapter 11). After Ferstel's Votivkirche the next Neo-Gothic structure was the Academische Gymnasium in the Beethovenplatz; this was built in 1863–6 by Friedrich von Schmidt (1825–91), who had worked earlier under Zwirner on the restoration and completion of Cologne Cathedral. But the school was

soon outshone in size and in elaboration by Schmidt's Rathaus of 1872–83. This stands between Hansen's Parlament and Ferstel's University but in a line with the Reichstrasse at their rear. The Vienna Rathaus is certainly not unrelated to G. G. Scott's Victorian Gothic and that of Waterhouse in England, particularly in the side wings that end, eclectically enough, in high-mansarded pavilions. But the general fussiness of the turreted front recalls rather pre-Puginian Gothic, say Porden's Eaton Hall of seventy years earlier (see Chapters 6 and 10).

Despite the total visual unlikeness of the Rathaus to its Grecian neighbour, the Parlament, both have a similarly obsolete air. It is as if Francis Joseph's presumptive intention in the fifties of outbuilding Napoleon III had been succeeded by a belated and rather provincial desire to outrival the larger structures in other countries in the two leading modes of the previous period, the Greek Revival and the Gothic Revival, neither well represented hitherto in Vienna.

Yet an equally prominent public monument of the seventies and eighties, the Burgtheater, which stands just opposite the Rathaus, is of a Late Renaissance, almost Neo-Baroque order, with a distinctly Second Empire flavour to its bowed front and generally very plastic composition (Plate 73A). This, the most distinguished of all the public monuments along the Ringstrasse, was built in 1874–88 by Semper, whose international career in Germany, England, and Switzerland wound up in Vienna after he was called there in 1871 by Francis Joseph to advise on the extension of the Hofburg Palace. Except perhaps in its bowed front, this Viennese theatre does not much resemble the rebuilt Dresden Opera House of 1871–8 which Semper had just designed (see Chapter 9). Perhaps Semper and his Viennese partner Karl von Hasenauer (1833–94), a pupil of Van der Nüll and of Siccardsburg, were somewhat influenced by the plans on which they were working together for the extension of the nearby palace; these were, not inappropriately, in the Austrian Baroque of Fischer von Erlach's unfinished Michaelertrakt of the Hofburg dating from the second quarter of the eighteenth century. However that may be, the theatre, boldly scaled and tightly composed, is a far more successful building than the very derivative Neue Hofburg projecting out towards the Ring as that was executed in 1881–94 by Hasenauer after Semper's death. The post-War restoration of the theatre and the rebuilding of its auditorium are by M. Engelhart.

Semper and Hasenauer's two vast Museums of Art History and Natural History face each other on a large square across the Burgring from the Neue Hofburg. Of identical design, they were both largely built in 1872–81. In the treatment of the exteriors – they were finished internally only very much later – as also in some of Hansen's very latest work in Vienna, one senses a conscious rejection of the bold plasticity and the compositional elaboration characteristic of the preceding decades, and most notably of the Burgtheater. The Renaissance detail is by no means sparse, but there is an academic sort of primness and orderliness belonging to the last quarter of the century such as has been noted earlier in Koch's Roman work.

The Bodenkreditanstalt built by Emil von Förster, the son of Ludwig, in 1884–7 is still more severe in its Florentine *quattrocento* way, recalling the more Tuscan aspects of

the *Rundbogenstil*. With this may be contrasted the unashamed Neo-Baroque of Karl König's Philipphof of 1883, introducing one of the modes most characteristic of the end of the century in both Austria and Germany.

Budapest, the second capital of the Austro-Hungarian Empire, was also much embellished with public buildings by Francis Joseph. Stüler from Berlin worked here, using a quiet version of the *Rundbogenstil* for the Academy of Sciences in 1862–4. But the later and more ornate *Rundbogenstil* of Berlin and Vienna had already been echoed in Budapest by Frigyes Feszl (1821–84) in the Vigado Concert Hall of 1859–65. This could easily be by Ferstel, so similar is it to his bank in Vienna. The leading Hungarian architect of the period, Miklós Ybl (1814–91), who was trained in Vienna, also used the *Rundbogenstil*, but of a rather more Romanesquoid sort, for the Ferenczváros Parish Church which he built in 1867–78. However, his Renaissance Revival Custom House of 1870–4 is more nearly up to the best Vienna standards of the day as maintained by Hansen and Förster. The Opera House that Ybl built in 1879–84, with its boldly convex mansards, vies in its rich plasticity with Garnier's, but none too successfully. The Szent Lukász Hotel by Rezsö Lajos Ray is one of the largest mansarded Second Empire hotels anywhere in the western world. On the whole, the dominant influences in Hungary were Austrian and German, however, not Parisian, as is hardly surprising. No autochthonous note was struck; as is true of all Eastern Europe, the architecture of this age is as essentially colonial in character as in the outlying British Dominions or in Latin America, although the models emulated were rather different.

CHAPTER 9

SECOND EMPIRE AND COGNATE MODES ELSEWHERE

IN the cities of Germany and of Northern Europe generally there were in this period no such comprehensive urbanistic developments as in Paris and Vienna. Some individual public monuments are, perhaps, not inferior to those that Napoleon III and Francis Joseph obtained from their architects; but these are rarely grouped into such coherent entities as the Marktplatz in Karlsruhe of the first quarter of the century or the Ludwigstrasse in Munich of the second quarter. The domestic building of the period is also considerably less consistent in character than in Paris and Vienna.

The architectural scene in Germany was overshadowed by the distinguished achievements of the previous period. The Schinkel tradition, although increasingly corrupted, lasted on almost indefinitely not merely in Prussia but in most German states. Stüler, Schinkel's ablest disciple in Berlin after the death of the short-lived Persius, remained an internationally respected practitioner. He was employed in Sweden and in Hungary, not to speak of other German cities besides Berlin, down to his death in 1865. By him and by many others the *Rundbogenstil* was employed quite as late as in Austria-Hungary both in the various German states and also in the Scandinavian countries. Such a very large and prominent public building as the Berlin Rathaus of 1859–70 by H. F. Waesemann (1813–79) well indicated the long-continued hold of this mode on German officialdom. Nor was this particularly inferior in quality to much similar work produced in the earlier heyday of the *Rundbogenstil* before 1850. As in Austria, however, alternative modes were growing increasingly popular, even though none rose to a local dominance comparable to that of revived Renaissance in Vienna. The taste of the period for elaboration, both in general composition and in detail, is everywhere evident regardless of the mode employed.

French influence was not absent; indeed, specifically Second Empire features were perhaps more common than in Austria. G. H. Friedrich Hitzig (1811–81), a former assistant of Schinkel's, had actually studied in Paris. After Stüler, he was the most prominent and successful architect of the period in Berlin, and in the fifties he built a few mansarded houses there. Along the new Viktoriastrasse in the Tiergarten quarter, where he did a great deal of work in 1855–60, one house among the eight that he built was mansarded; the others and most of those he was erecting near by in the Bellevuestrasse, the Stülerstrasse, and other streets at the same time were, however, in a much elaborated Schinkelesque vein. Surburban houses of the sixties occasionally followed Parisian modes also; but far more were clumsy variants of Schinkel's and Persius's Italian Villas, or else in some sort of equally clumsy Gothic.

Public buildings in Germany were only occasionally designed in the mansarded mode and, in general, only after the mid sixties. The Baugewerkschule in Stuttgart, built in

1866–70 by Josef von Egle (1818–99) its director, had projecting centre and end pavilions with crudely Parisian detailing. It is curious to realize that it was contemporary with Leins's belated but rather distinguished Grecian Königsbau there. In Cologne the Stadttheater of 1870–2 and the High School, also of the seventies, by Julius Raschdorf (1823–1914), both destroyed in the last War, were heavily mansarded and very plastically modelled; the former, at least, on which H. Deutz collaborated with Raschdorf, had some real compositional interest in the tight interlocking of the masses (Plate 77B). Despite their very evidently French character, both were considered by contemporaries to be 'German Renaissance' – as, for that matter, was Wieleman's Justizpalast in Vienna – because of the specific precedent of much of the detail; German Renaissance was by this time the latest fashion, but to later eyes these buildings in Cologne were no more characteristic examples of it than the one in Vienna. Raschdorf is better known in any case for his much later Neo-Baroque work, notably the Berlin Cathedral, for which he prepared the design in 1888, although it was not built until 1894–1905.

The Military Hospital by F. Heise in Dresden was much more French in the strong articulation of the mansarded centre and end pavilions and also in its quite Parisian detailing than Raschdorf's contemporary buildings of the seventies in Cologne. More prominent in Dresden by far, however, is the Hoftheater, which is not at all French in character. This was designed in 1871 by Semper after his earlier theatre there had been destroyed by fire; its construction was supervised by Semper's son Manfred after he settled in Vienna, and completed in 1878. Gone was most of the festive grace and delicacy of his Hamburg and Dresden work of the forties, even though the auditorium was not dissimilar to the one that had been destroyed. Yet in the arrangement of the interior and the disposition of the masses this rivals in clarity of organization the opera-houses of Garnier in Paris and of Van der Nüll & Siccardsburg in Vienna. The plans undoubtedly owed a great deal to the elaborate studies Semper had made for Ludwig II in 1865–7 for an opera-house to be built in Munich especially for the production of Wagner's operas.

The relative importance of Berlin was, of course, rising well before its establishment as the imperial capital in 1871. Friedrich Hitzig's most considerable public building in Berlin, the Exchange, built in 1859–63 at the same time that the Rathaus was in construction, was neither Schinkelesque nor *Rundbogenstil* but in a rather academic sort of Late Baroque (Plate 77A). Hitzig seems to have been consciously recalling what Knobelsdorf built for Frederick the Great and thus presaging the more overt Neo-Baroque of the last decades of the century. His later Reichsbank of 1871–6, on the other hand, was in general considerably more Classical despite its banded and diapered walls in two colours of brick.

The public buildings of Martin K. P. Gropius (1824–80) are also indicative of the general stylistic stasis of this period in Germany. His Museum of Decorative Art in Berlin, begun in 1877 and completed in 1881 by Heinrich Schmieden (1835–?), still resembled Hitzig's houses of the fifties in its Grecian elaboration; it also recalled Klenze's Hermitage Museum, built more than a generation earlier in Petersburg. Gropius & Schmieden's still later Gewandhaus in Leipzig of 1880–4, however, is less reminiscent of

Schinkel or Klenze and more conventionally academic. This concert hall was renowned for its superb acoustics.

It is easy to forget how much the architects of these decades, apparently obsessed with stylistic elaboration, were also concerned to incorporate in their buildings all sorts of technical advances. Iron may show less than in the previous period, but it was quite consistently used behind the scenes. Central heating, extensive sanitary equipment, vertical transportation, and various other things that are taken for granted today first became accepted necessities in these decades. But it was only in the commercial field – and in England and the United States above all – that such technical innovations influenced architecture very positively or visibly (see Chapter 14), however much they must actually have preoccupied architects who seem today so imitative and retardataire. The Anhalter Bahnhof in Berlin by Franz Schwechten (1841–1924), however, built in 1872–80, did represent a real advance over the principal English railway station of this period, St Pancras in London of 1863–76, in the clarity and coherence of its organization. One can hardly say that the shed roof of the Anhalter Bahnhof was in the *Rundbogenstil*; yet it is much more happily related in scale and shape to the masonry elements of the station than are the two parts of that in London, world-famous nonetheless until the nineties for the unrivalled span of its shed.

Architectural activity in Bavaria was of a very different order. The Ludwigsschlösser,[1] the country palaces that Ludwig II of Bavaria erected for his private delectation after he succeeded Maximilian II in 1864, are the playthings of a monarch mad about Louis XIV. Linderhof, built in 1870–86, revived a local Bavarian sort of Baroque, and was thus even more premonitory of a favourite German mode of the eighties and nineties than Hitzig's Berlin Exchange (Plate 84). Herrenchiemsee, first projected as early as 1868 but begun only in 1878, is a direct imitation of Versailles. Neuschwanstein, on the other hand, is a wild Wagnerian fantasy of a medieval castle occupying a superb mountain site.

It must be assumed that the architect of the first two, Georg von Dollmann (1830–95), was little more than the draughting agent of his master's dreams of grandeur. More interesting than the exteriors are the incredibly rich interiors of Linderhof, operatic recreations of the Bavarian Rococo. Appropriately enough these were designed by Franz von Seitz (1817–83), then director of the Munich State Theatre, who was famous for his stage-sets. At Herrenchiemsee, however, many of the interiors were exact copies of the main apartments of Louis XIV at Versailles. These were executed by Julius Hoffmann (1840–96), who began to work under Dollmann in 1880 and succeeded him in 1884. More original were certain other rooms at Herrenchiemsee designed by F. P. Stulberger after 1883 in an even more elaborate and fantastic Neo-Rococo than those by Seitz at Linderhof.

Ludwig II had another obsession besides the majesty of Louis XIV, and that was the genius of Richard Wagner. This cult is almost nauseatingly reflected at Neuschwanstein, for which Riedel, who had built Schloss Berg in 1849–51, prepared the original design in 1867. Construction there began in 1869, was taken over by Dollmann in 1874, and only completed as regards the exterior in 1881; much of the decoration is still later. Despite Ludwig's romantic love of the real Romanesque of the Wartburg, Neuschwanstein

really differs very little from the fake castles of the first half of the century, except in its very ingenious adaptation to a most precarious site. It is the later interiors, designed by Hoffmann in the early eighties, that attempt to realize the Wagnerian legends both in the architectural detailing and in endless murals. The whole culminates in the Byzantinesque throne room of 1885–6 intended by Ludwig to be a sort of 'Grail Hall' from *Parsifal*. The results of his other obsession are more gratifying to the eye.

Never again would any ruler, however, not even in Germany, be so spendthrift a patron of architecture. Considering the deterioration in quality evident in these palaces and castles of the seventies and eighties from the work done for Ludwig's predecessor Ludwig I or for Frederick William IV of Prussia in the thirties and forties, this was just as well. Fortunately the activities of William II were less related to the building arts; and Hitler, a thwarted architect, had too little time.

Far more typical of the turn German architecture in general was taking in the seventies than the Ludwigsschlösser were such things as the von Tiele house in Berlin by Gustav Ebe (1834–1916) and Julius Benda (1838–97). In its crawlingly rich German Renaissance detail and its irregularly gabled silhouette this prepared the way far more definitely than Raschdorf's contemporary Cologne buildings for a veritable flood of such coarse work all over Germany in the next decade. This characteristic German mode has analogies with the English style-phase of the seventies and eighties somewhat perversely known as 'Queen Anne'; more specifically it often resembles very closely what is called 'Pont Street Dutch' in England. But leadership comparable to that provided in England by Webb and Shaw was entirely lacking, and even lesser talent of the order of George's or Collcutt's (see Chapter 12).

Usually executed in dark-coloured brick with stone trim, this prime manifestation of the bourgeois ambitions of the Bismarckian Empire produced a spate of buildings of all sorts that have come to look very grim indeed with the accumulated smoke of years. Old photographs indicate that many of them once had a certain lightness and even a quite festive air, Wagnerian in the *Meistersinger* vein rather than in that of the *Ring* as at Neuschwanstein. But the materials used were always hard and mechanically handled and the execution of the detail at once fussy and metallic. No positive originality in general composition or in planning made up, as with much comparable work in England, for the anti-architectonic character of the basic approach.

A prominent late example is the Rathaus [2] in Hamburg built in 1886–97. This vast and turgid edifice contrasts most unhappily with the suave High Renaissance design of Wimmel & Forsmann's contiguous Exchange built in the thirties. Its tall tower, moreover, has neither the richness of outline of Scott's on the Nikolaikirche nor the simple directness of de Chateauneuf's on the Petrikirche, with both of which it still disputes the central position on the Hamburg skyline.

The nationalistic 'Meistersinger mode', so to call it, had only too long a life, lasting well into the twentieth century. But it was early challenged by a new modulation of German taste in the eighties, parallel to that which the English also experienced, towards an eighteenth-century revival – here in Germany definitely Neo-Baroque – of which Linderhof was probably the first really sumptuous and striking example. Ebe &

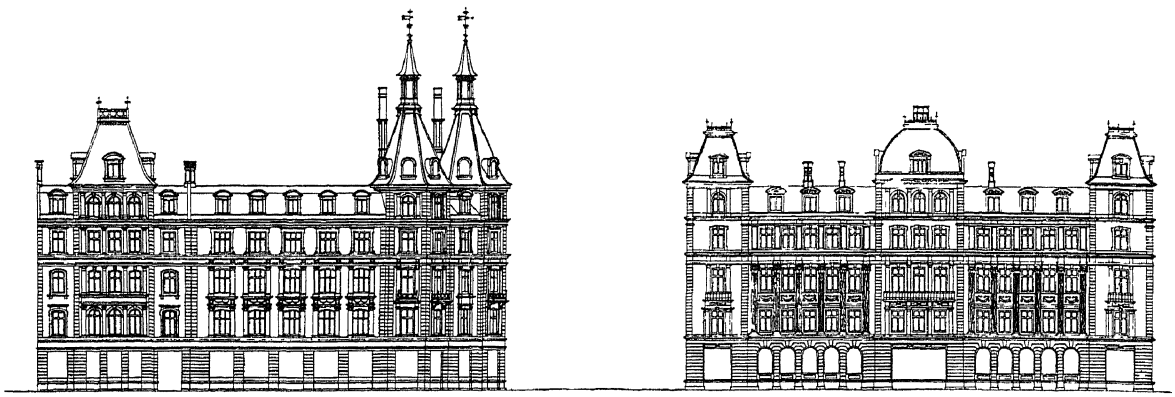


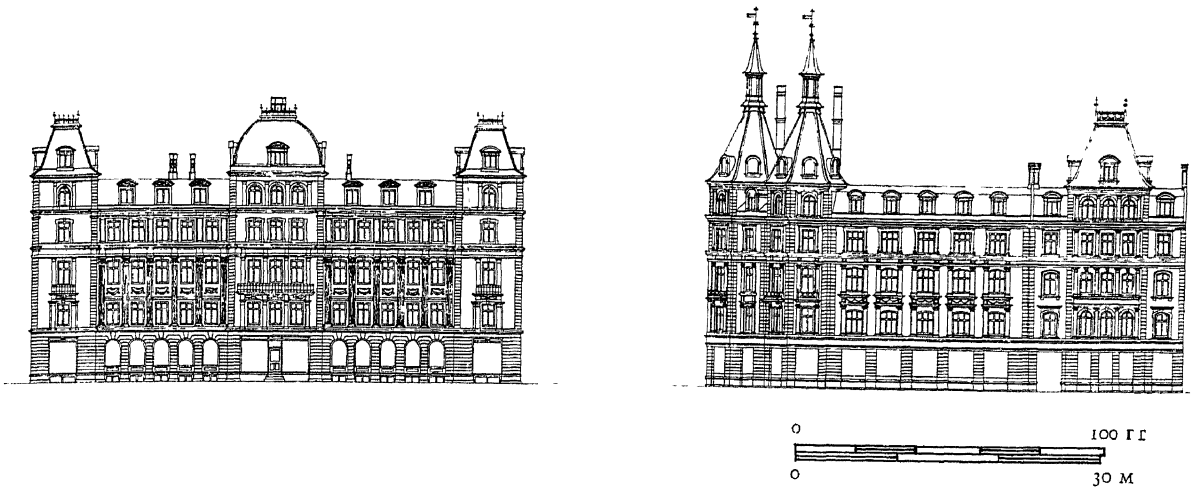
Figure 16. Vilhelm Petersen and Ferdinand Jensen: Copenhagen, Søtorvet, 1873–6, elevation

Benda early deserted the German Renaissance for a German Baroque at least as chastened as that of Hitzig's much earlier Exchange when they built their Palais Mosse in Berlin of 1882–4. In 1882 Paul Wallot (1841–1912), who had also worked earlier in the Meistersinger mode, won the competition for the Reichstag Building with an overpoweringly monumental Neo-Baroque project recalling Vanbrugh more than Bernini or Schlüter. Erected by him in 1884–94, this was soon matched at the other end of Unter den Linden by Raschdorf's cathedral.

Unlike Napoleon III and Francis Joseph, the German emperors William I, Frederick I, and William II did not succeed in making their capital an important exemplar of nineteenth-century urbanism. Moreover, the influential position that Germany had occupied in the international world of architecture in the first half of the century was less and less maintained after the death of Stüler. Not until the twentieth century did Germans again make a significant contribution to European architectural history (see Chapter 20).

With the deterioration of German leadership in the seventies and eighties went also a general decline in the architectural standards of the Scandinavian countries that had so successfully based their later Romantic Classicism and their *Rundbogenstil* on German models of the thirties, forties, and fifties. In Denmark the work of Meldahl was increasingly inferior to that of Herholdt. Although he was only nine years younger than Herholdt, his direction of the Copenhagen Academy, beginning in 1873, coincided with the feeblest and most eclectic period in Danish architecture, from which recovery started only in the nineties with the early work of Martin Nyrop (1849–1925) in Copenhagen and of Hack Kampmann (1856–1920) in Aarhus (see Chapter 24).

A characteristic urbanistic development of the seventies in Copenhagen, the Søtorvet built in 1873–6 by Vilhelm Petersen (1830–1913) and Ferdinand Vilhelm Jensen (1837–90), is French not German in its ultimate inspiration. This grandiose pavilioned and mansarded range of four tall blocks forms a shallow U-shaped square along a canal (Figure 16). Its definitely Second Empire character may not, all the same, have derived directly from Paris but via German or English intermediaries, so much more typical is this of the international than of the truly Parisian mode of the third quarter of the century.



As late as 1893–4 the much more conspicuous Magasin du Nord department store, built by A. C. Jensen (1847–1913) and his partner H. Glaesel in the Kongens Nytorv in Copenhagen, also carried the high mansarded roofs of the new Louvre, both flat-sided and convex-curved, above its end and centre pavilions. The detailing was chastened, however, by memories of local palaces and mansions in the nearby Amalie quarter of the city, where Jensen had worked on the completion of the eighteenth-century Marble Church. The Magasin du Nord thus combines two characteristic aspects of the architecture of the period, evident in most countries but rarely thus joined: a reflection of Napoleon III's Paris, elsewhere reaching its peak around 1870, and a revival of the style of the seventeenth and eighteenth centuries, generally beginning about a decade later.

In Sweden also there was some Second Empire influence, although nothing very notable resulted from it. The Jernkontovets Building in Stockholm erected by the brothers Kumlien (A.F., 1833–?; K.H., 1837–97) in 1873–5 has a high mansard and pavilions combined with a respectably academic treatment of the façades that is quite different from the bombast of the Søtorvet. Bern's Restaurant in Stockholm of 1886 by Åbom, whose more conservative Renaissance Revival theatre of thirty years earlier has been mentioned, is similarly Parisian, particularly in the decorations that were provided by Isaeus.

With I. G. Clason (1856–1930) the tide of eclecticism in Sweden turned more nationalistic. The Northern Renaissance of his Northern Museum, built in 1889–1907, parallels somewhat belatedly the Meistersinger mode in Germany; but it also shows a more refined and delicate touch, somewhat like that of George and of Collcutt in England. As in most other countries, the revival of the native sixteenth-century style was soon succeeded by a revival of the Baroque, here rather academically restrained. This phase is most conspicuously represented in Stockholm by the grouped Parliament House and National Bank of 1897–1905 by Aron Johansson (1860–1936). In the nineties Ferdinand Boberg (1860–1946) was also initiating a new movement somewhat comparable to that led by Nyrop in Denmark (see Chapter 24).

The modes of Second Empire Paris left rather more mark on Holland than did those of the First Empire, particularly in the work of Cornelis Outshoorn (1810–75), whose

iron-and-glass Paleis voor Volksvlijt in Amsterdam of the late fifties has been mentioned earlier. That is gone, but the associated Gallerij, a U-shaped range of mansarded blocks linked by a sort of veranda of cast iron, still bounds one half of the Frederiksplein. His enormous Amstel Hotel, near by on the farther side of the Amstel, was built in 1863–7. At Scheveningen the Oranje Hotel, also by him, is one of several typical resort establishments there of an international Second Empire order, as is also the Hotel Berg en Dal at Nijmegen. Fairly generally, moreover, high mansards rose in the sixties and seventies over the narrow house-fronts in the new quarters of Dutch cities. However, the opposing Neo-Gothic is more significant historically in Holland, and the secular work of Cuijpers as well as his churches, although rather like Clason's, is better considered in that connexion (see Chapter 11). As in the Scandinavian countries, the nineties saw new beginnings in Holland, in this case with the appearance of Berlage and Kromhout (see Chapter 20).

The principal Anglo-American developments in the second half of the century were in the specialized fields of domestic and commercial building (see Chapters 14 and 15). England, moreover, had from 1850 to the early seventies a lively stylistic development of her own, the High Victorian Gothic, rather different from the later Neo-Gothic of the Continent, which was also very influential in the Dominions and in the United States (see Chapters 10 and 11). Nevertheless, the international Second Empire mode flourished on both sides of the Atlantic among Anglo-Saxons to a greater extent, perhaps, than anywhere in Europe. It is not, of course, possible to subsume all non-Gothic work of these decades in England under the Second Empire rubric any more than on the Continent. Yet, with certain notable exceptions, the most vigorous and conspicuous buildings of a generically Renaissance character were clearly inspired by Paris, and often specifically by the New Louvre, as Prosper Mérimée noted and wrote to Viollet-le-Duc while on a visit to London in the mid sixties.

The most considerable English public monument built just after the mid century, the Leeds Town Hall of 1855–9, is by Cuthbert Brodrick (Plate 78A). That Brodrick was an architect markedly French in his leanings has already been noted in describing his Leeds Corn Exchange, which is later in date but earlier in style than his Town Hall (see Chapter 4). But this major early work, for which Brodrick won the commission in a competition in 1853, is not easily pigeon-holed stylistically. The great hall inside derives quite directly from Elmes's in Liverpool, designed almost a quarter of a century earlier, though not opened until 1856. The exterior recalls in its grandiose scale the English Baroque of Vanbrugh more than it does anything that had even been projected since the megalomaniac French projects of the 1790s. The Leeds Town Hall is certainly no longer Romantic Classical, no longer Early Victorian; yet except for the rather clumsy originality of some of the detail and the varied outline of the tower – a late emendation of the original project of 1853 – it is hard to say how or why it is so definitely High Victorian, and rather a masterpiece of the High Victorian at that. Wallot in Berlin in the eighties approached Brodrick's mode of design in the Reichstag but had little of his command of scale or his almost Romantic Classical control of mass.

When Brodrick designed his town hall very little was known in England of Visconti's

project of 1852 for the New Louvre, and Lefuel had not yet begun to elaborate the design. So vigorously individual an architect as Brodrick was hardly likely, moreover, to find inspiration in the Hope house of Dusillion or the Hardwicks' Great Western Hotel. But the wave of Second Empire influence arrived in England well before the Leeds Town Hall was finished. When the English swarmed to Paris to visit the International Exhibition of 1855 the character of the New Louvre became generally known to architects and to the interested public. The Crimean War in the mid fifties served, moreover, to bring English and French officialdom into close contact. To English ministers and civil servants, even more than to architects and ordinary citizens, the existing governmental accommodations in Whitehall contrasted most unfavourably with those Napoleon III was providing in the New Louvre. When a competition was held in 1856–7 for a new Foreign Office and a new War Office to be built in Whitehall, it is not surprising that those entrants who were not convinced Gothicists should have modelled their projects on the work of Visconti and Lefuel.

Barry, the head of the profession, did not enter the competition; but unofficially – for he was still an employee of the Government at the Houses of Parliament – he prepared at this time a comprehensive scheme for the development of the whole length of Whitehall from Parliament Square to Trafalgar Square. In this project he crowned all his façades – including that of his already executed Treasury – with mansards, introduced stepped-back courts like that of the New Louvre, and marked the corners and the centres of the court façades in the most Louvre-like way with pavilions crowned by still taller mansards. Had this project of Barry's been followed, London would rival Paris and Vienna in the extent, the consistency, and the boldness of her public buildings of this period. In fact, practically nothing ever came of it nor, indeed, of the official competition; for by this period earlier traditions of urbanism had all but completely died out and architectural initiative was largely in private hands.

When the competition was judged in 1857, the designs that received the top prizes both for the War Office and for the Foreign Office were in the pavilioned and mansarded manner; they derived, however, at least as much from the Tuileries as from the New Louvre. It was the rising prestige of Napoleon III, of course, that called public attention at this time to the Tuileries which was his residence – as it had been, for that matter, the residence of earlier nineteenth-century French monarchs. Otherwise no one in England would probably have thought of reviving any of the various periods, covering some four centuries, represented in its conglomerate mass or of emulating its pavilioned and mansarded composition.

Since neither of these projects for ministries was ever executed, and their respective architects – Henry B. Garling (1821–1909), on the one hand, and H. E. Coe (1826–85) and his partner Hofland, on the other – never built much else of consequence, it is not necessary to linger over them. However, their designs and other Second Empire ones that received minor premiums were extensively illustrated in professional and general periodicals, and they provided favourite models in the sixties both in England and in the United States. The Paris originals, on which graphic data was not only scarcer but also less readily accessible, were not on the whole so influential. This helps to explain why

French influence *appears* to have been stronger in the Anglo-Saxon world than on the Continent, even though there was probably less direct contact with Paris.

There was also in England at this time a general tendency, even more notable than in Austria or Germany, to enrich and elaborate plastically the long-established Renaissance Revival mode. This is less specifically inspired by Paris. An excellent example is provided by the extensive range of terraces, designed by Sancton Wood (1814–86) in 1857, that flank Lancaster Gate in the Bayswater Road in London with their boldly projecting bay windows linked by tiers of colonnades. In other examples, such as the National Discount Company's offices at 65 Cornhill built by the Francis Brothers in 1857, the capping of the whole block with a boldly dormered mansard [3] is more obviously of Second Empire inspiration, though the façades below are merely of a much enriched *palazzo* order.

When the Moseley Brothers designed in 1858 the vast Westminster Palace Hotel near Westminster Abbey at the foot of Victoria Street, a caravanserai intended to exceed the Hardwicks' Great Western Hotel of 1850–2 in international luxury, they took over its pavilioned and mansarded design. To judge from the relative dignity and sobriety of their detailing, they would seem to have studied contemporary Parisian work – not the New Louvre but the quieter *maisons de rapport* along the boulevards – rather than merely basing themselves on the prize-winning Government Offices projects as so many others were content to do at this time. This hotel, which proved a failure, now serves as a block of offices, and has been remodelled almost beyond recognition.

The next year Barry designed the Halifax Town Hall, his last work. He did not himself propose to cap this, like the Government Offices in his Whitehall scheme, with French mansards; those that were executed are an emendation by his son, E. M. Barry, who carried the building to completion in 1862 after his father's death in 1860. But the richly arcaded articulation of the walls and the emphatic forward breaks of the great tower and of the more modest pavilion at the other end clearly emulate, without directly imitating, the sumptuous plasticity of the New Louvre. Nevertheless, the boldly asymmetrical composition, dominated by a single corner tower, is more in the Italian Villa vein (Plate 78B).

This tower – but not the site – was lined up with the axis of Prince's Street, which enters Crossley Street at this point. The assured quality of its design and above all that of its tremendous spire, more than worthy of Wren in the ingenuity with which the silhouette of a Gothic steeple was built up out of Renaissance elements, makes the Halifax Town Hall thoroughly English and one of the masterpieces of the High Victorian period. Totally devoid of Gothic elements, it has more Gothic vitality than Barry's Houses of Parliament, at this time just approaching completion nearly thirty years after they were first designed.

E. M. Barry went on to crown two London station hotels, that at Charing Cross in 1863–4 and that at Cannon Street in 1865–6, with mansards; but these were far from being masterpieces, and that at Charing Cross has lately been much modified. The Grosvenor Hotel, built beside the new Victoria Station in 1859–60 by Sir James T. Knowles (1831–1908), is far more original. He covered the whole enormous mass with a very

tall convex mansard, giving further emphasis to the broad pavilions at the ends by carrying their roofs still higher and capping them with lanterns. Beyond this nothing was French. The detail indeed, defined by its architect as 'Tuscan', i.e. *Rundbogenstil*, is highly individual, partaking of the coarse gusto and even somewhat of the naturalism of the most advanced Victorian Gothic foliage carving of the period (see Chapter 10).

Similar mansards, but flat-sided not bulbous, and similar detail characterize a pair of tall terraces that Knowles built in 1860 on the north side of Clapham Common, south of London. These constituted a subtle suburban attack on Early Victorian traditions of terrace-design that soon had metropolitan repercussions. His Thatched House Club in St James's Street in London of 1865 has a great deal of very rich carving by J. Daymond in the naturalistic vein, but is less interesting in general composition.

Knowles's Grosvenor was still new when John Giles outbid it with the Langham Hotel, begun in 1864. Given a much finer site than Knowles's at the base of the broad avenue of Portland Place across from Nash's All Souls', Langham Place, Giles rose boldly – most people now think too boldly – to the occasion (Plate 80A). Certainly he overwhelmed Nash's delicate and ingenious steeple by the rounded projection and the tall square corner tower – now bombed away at the top – with which he faced it. Equally certainly his massive north façade, with its boldly modelled flanking pavilions and its profusion of lively animal carvings, would overwhelm the urbane refinement of the nearby Adam terraces flanking Portland Place had these not by now been replaced by far inferior buildings. For all its gargantuan scale and the somewhat elephantine playfulness of the detail (not to speak of the dinginess to which the 'Suffolk-white' brickwork and the stone trim have now been reduced), the Langham is a rich and powerfully plastic composition, most skilfully adapted to a special site, and more original than most of what was produced in the sixties in Paris. The carved animals at the window heads, so varied and so humorous, deserve an attention they rarely receive; these scurrying creatures almost seem to come out of Tenniel, but may actually derive from Viollet-le-Duc.

That this degree of architectural originality, presented with such bold assurance and even bombast, should within a decade or two have come to seem tasteless and actually ugly – as, indeed, it has seemed to many ever since – is not of major historical consequence. The age that achieved it rejected as tasteless and insipid the architectural production of the previous hundred years, and most notably Late Georgian work of the sort to which the Langham stood in close proximity. What *is* of consequence is that such High Victorian buildings, even when not Gothic, possessed a vitality and a contemporaneity within their period that was very largely lacking in parallel work on the Continent, most of which in any case is a decade or more later in date. In their parvenu brashness, the Grosvenor and Langham balance the contemporary achievement of the Gothic church architects – an achievement generally more acceptable even today as it was already to highbrows and aesthetics in the sixties – without necessarily equalling it (see Chapter 10).

In the English hotel boom of the early and mid sixties which these big London hotels set off, some variant of the anglicized Second Empire became the accepted type of

design; indeed, a mansarded French mode continued to be used as late as the nineties [4] for such a big London hotel as the Carlton in the Haymarket built by H. L. Florence in 1897. Many heavily mansarded London hotels of the seventies and eighties are now gone or have been turned, like the earlier Westminster Palace and the Langham, to other uses – among these the former Grand Hotel in Trafalgar Square of 1878–80 by H. Francis and the front block of the former Cecil in the Strand built in 1886 by Perry & Reed may at least be noted here, since they remain so conspicuous and are so exasperatingly unavailable to travellers.

It is a resort hotel, however, the Cliff (now the Grand) at Scarborough in Yorkshire, built by Brodrick at the height of the boom in 1863–7, just before he retired to live in France, that remains internationally the most notable example of the type (Plate 79). And the type could be found in such remote spots as the famous 'ghost town' of the Comstock Lode, Virginia City, Nevada, where the large and elaborate hotel is no more, or Leadville, Colorado, where the more modest and much later Vendome Hotel, built by Senator Taber for his 'Baby Doe', is still in use, as well as in big European cities such as Amsterdam, Frankfort, Brussels, and Budapest.

The site of Brodrick's Grand Hotel is a superb one on the edge of the Scarborough cliffs above the North Sea, as different as possible from the setting of the New Louvre. Its corner pavilions are capped, not with ordinary high mansards, but with curious roofs like pointed domes, richly crowned with elaborate cornices. In the intricacy of their silhouette these are not unworthy rivals of Barry's Halifax tower. The massive walls are not of freestone in the manner of Paris nor yet of pallid Suffolk brick with light coloured stone or cement trim as in London. Instead, they are of warm red brick with incredibly lush decorative trim of tawny terracotta – a combination that M. D. Wyatt also used on the most elegant Second Empire mansion in London, Alford House, which stood from 1872 until 1955 in Prince's Gate at the corner of Ennismore Gardens (Plate 83A).

Public and private architecture could hardly hope to rival the sumptuousness of the new hotels, and in Britain rarely attempted to do so. At Liverpool T. H. Wyatt in 1864–9 carried a U-shaped range of ornately pavilioned and mansarded blocks that housed the Exchange around the open space at the rear of the Town Hall, somewhat as Outshoorn carried his Gallerij around the Paleis voor Volksvlijt in Amsterdam, but that is now all gone.

In the English countryside, the Bowes Museum at Barnard Castle in County Durham, built in 1869–75 by J.-A.-F.-A. Pellechet (1829–1903) and Waddesdon Manor in Buckinghamshire by another French architect, H.-A.-G.-W. Destailleur (1822–93), completed in 1880, are unique examples of extensive mansions completely in the Second Empire mode (Plate 76B). In London Montagu House, designed in 1866 by the elderly Burn for the Duke of Buccleuch, once raised in Whitehall the mansarded pavilions that Barry and the winners of the Government Offices competition had proposed in 1857, but this has now been demolished.

The most notable Second Empire ensemble in London, however, survives almost intact (Plate 80B). Facing the gardens of Buckingham Palace and extending southward

from the group of Late Georgian monuments around Hyde Park Corner, are the terraces of Grosvenor Place. These were designed[5] in 1867 and built in the following years. They provide one of the more striking features of the London skyline inherited from the Victorian period. Rivalling the high roofs and, almost, the tall steeples of the Victorian Gothic, the mansards over the end houses are carried to fantastic heights and capped with pointed upper roofs, providing several storeys of attics; while the centre houses have convex mansards like square domes taken straight from the New Louvre.

Below these Alpine crests, elaborated at the base with rich stone dormers, the enormous houses are all of fine Portland stone – hardly to be found in any earlier nineteenth-century London terraces except those of Ennismore Gardens – and detailed with a plausibly Parisian flair – it is even said that draughtsmen were sent to Paris to study Second Empire work at first hand. English are the porches, however, which make plain that these pretentious ranges are rows of dwellings like those in nearby Belgrave Square. English, also, are the red stone bands, novel touches echoing the fashionable 'structural polychrome' of the contemporary Victorian Gothic, just as the tall mansards echo its pointed roofs (see Chapter 10).

Beyond the first two blocks of Grosvenor Place the new construction of the sixties stops; but it starts again at the farther end and surrounds the two triangles of Grosvenor Gardens, of which Knowles's hotel occupies part of the farther side. It is characteristic of the Parisian inspiration of the whole that on the east side of the Gardens great blocks of flats – 'mansions' in a Victorian euphemism – replaced the usual London terraces of individual tall houses, but these now serve as offices as do most of the houses in Grosvenor Place. For one of these blocks red brick was used, but set like a mere panel-filling within stone frames according to a French rather than an English tradition.

There are no other comparably pretentious examples of Second Empire terraces in London except Cambridge Gate by Archer & Green, which makes so unhappy an intrusion among Nash's stuccoed Regent's Park ranges despite its handsome execution in fine ashlar of Bath stone. Characteristically, London domestic architecture of the late fifties and sixties merely elaborated the Renaissance Revival formulas of the previous decade. Not only were the chosen models generally later and richer, as in Vienna; wherever possible bolder plastic effects were achieved by a more extensive use of ground-storey colonnades, first-storey porches, and projecting bay windows, as on Wood's magniloquent terraces at Lancaster Gate or those of 1858 by C. J. Richardson (1800–72) that followed them in Queen's Gate.

The high standards of the earlier period were maintained only in business *palazzi*, not those of London's City, but those in big Northern towns like Bradford and in Scotland. There good freestone was readily available and a certain cultural lag, as well as a regional sobriety of temperament, led to the maintenance of more Barry-like standards. Notable everywhere for their academic virtues are the various National Provincial Bank buildings by Barry's pupil John Gibson (1819–92). The earliest, but not the most typical, is the head office in Bishopsgate, which was begun in 1863.

A special school of Renaissance design is associated with Sir Henry Cole's Department of Practical Art, and this produced the various buildings that he sponsored in the new

London cultural centre in Brompton (now usually called South Kensington). The Exhibition of 1862, on the southern edge of the estate belonging to the Commissioners of the Great Exhibition, was housed in a structure designed by Francis Fowke (1823–65), an army engineer. As at the Paris Exhibition of 1855, the metal and glass construction of this was masked externally with masonry walls, but, unlike Cendrier's and Viel's Palais de l'Industrie, the whole was pavilioned and mansarded in the Second Empire mode. A still more elaborate Second Empire project was prepared by Fowke for the Museum of Science and Art (later Victoria and Albert), Cole having evidently accepted all too abjectly the criticism of his earlier temporary structure, the notorious 'Brompton Boilers' (see Chapter 7). As Fowke died at this point the Museum (Plate 83B), begun in 1866, as also the associated Royal College of Science (Huxley Building), built in 1868–71, were carried out in a much less French vein under another army engineer, H. G. D. Scott (1822–83). The walling material is a fine smooth red brick, very rare in the London of the nineteenth century, beautifully laid up with thin joints. With this is combined an enormous quantity of elaborately modelled pale cream terracotta, as on various Central European buildings deriving from Schinkel's Bauakademie in Berlin of 1831–6.

In these South Kensington structures, planned by an engineer, the emphasis is on the sculptural embellishment designed and executed by Godfrey Sykes and other artists associated with the Department. This team-work, by-passing as it did over-all control by an architect, was not very successful in achieving the coherence of Knowles's and Giles's hotels, although those were built for much less sophisticated clients. Much the same team, but with still more sculptors collaborating, was responsible for the Albert Hall, the vast circular auditorium built in 1867–71 on the northern edge of the Commissioners' Estate facing the most characteristic monument of the age, G. G. Scott's Victorian Gothic Albert Memorial. The engineer Scott's really notable achievement here in the metal construction of the vast dome is unfortunately swamped by the profuse investiture of sculptural detail in terracotta, intrinsically elegant though much of that is.

In the sixties there was some coherence in the planning of the Commissioners' Estate as a whole, with a garden court surrounded by a great hemicycle of terracotta arcading by M. D. Wyatt lying behind the 1862 Exhibition Building and below the Albert Hall. In Vienna the cultural edifices were admirably grouped along the Ringstrasse with plenty of open space between them, however much they may have lacked intrinsic architectural quality. In sad contrast is the way the following decades allowed this considerable tract to become clogged up until almost no urbanistic organization at all remains.

Other European countries tended in this period, like Denmark, Sweden, and Holland, to follow Paris and Vienna rather than London. Only a few works of the sixties and seventies need be singled out from the welter of pretentious public and private construction that turned Brussels, for example, into a 'Little Paris'. The Boulevard Anspach as a whole suggests the Cannebière in Marseilles, although the mansards on the buildings that line it are more plastically handled; the Exchange, in its own square half-way down the boulevard, was built by L.-P. Suys (1823–87) in 1868–73, and this provides the focus

of the mid-nineteenth-century city, as does Garnier's Opéra in Paris. A provincial variant of the Opéra in many ways, despite its quite different function, this is somewhat more academic in composition yet also rather coarser in its profuse ornamentation. Brussels as a whole is dominated, however, by one of the grandest and most original monuments erected anywhere in this period.

The Palace of Justice,[6] built by Joseph Poelaert (1817–79) in 1866–83, occupies so high a site and is mounted on so mountainous a substructure that almost the whole of its gargantuan mass is visible from all over the city. Although generically Classical, a good deal of the external treatment has an indefinable flavour of the monuments of the ancient civilizations of the East, somewhat like that of the exotic churches Alexander Thomson built in the late fifties and sixties in Glasgow (Plate 81). Even more than Thomson's relatively small and delicately scaled work, the Palace of Justice also suggests the megalomaniac architectural dreams of such a Romantic English painter as John Martin. Heavy and almost literally cruel, it has a Piranesian spatial elaboration and a plastic vitality of the most exaggeratedly architectonic order. Thus it quite puts to shame the urbane Renaissance costuming of most Continental public architecture of this period and the usual Neo-Baroque of the next.

The existence of this extraordinary edifice in a minor European capital prepares one a little for the important part that Brussels was to play in the nineties, even though there could hardly be two architects further apart in spirit than Poelaert and Victor Horta, who initiated there the Art Nouveau (see Chapter 16). So also in Glasgow, the originality of Thomson's Queen's Park Church of the sixties at least opened the way for the notable international contribution to be made by the Glaswegian C. R. Mackintosh in the nineties. But it was Alphonse Balat (1818–95), not Poelaert, who was Horta's master and also in these decades professor of architecture at the local Academy. Balat's Musée Royale des Beaux Arts of 1875–81 already represents a reversion to a more restrained and academic classicism with none of Poelaert's force and vitality. Yet this building is not without a certain correct elegance of detail and conventional skill in composition for which his houses of the sixties, with their Barry-like handling of the High Renaissance *palazzo* theme, prepared the way. The real eclecticism of this period lies less significantly in the variety of nominal styles employed than in the variety of ways of employing them. It is this, rather than the concurrent multiplication of fashionable modes, that makes it so difficult to characterize broadly the production of the period between the mid century and the nineties.

In several other European countries the situation was made even more complicated than in Belgium by a very considerable cultural lag such as has already been noted in Scandinavia. While the Rütschi-Bleuler House in Zurich of 1869–70 by Theodor Geiger had the fashionable Second Empire mansard, in this case high and concave, at nearby Winterthur Semper's Town Hall of precisely the same date, with its dominating temple portico, might at first sight be taken for a provincial French public edifice of the second quarter of the century. At the Zurich Polytechnic School, where Semper became a professor in 1855,[7] the large building begun in 1859 that he erected with the local architect Wolff is equally retardataire in style. His Observatory there of 1861–4 is a delicate and

rather picturesquely composed exercise in the *quattrocento* version of the *Rundbogenstil*, rather like his Hamburg houses of twenty years earlier.

If a German architect of established international reputation could be thus affected by the conservative tastes of his Swiss clients, it is not surprising that in the Iberian peninsula almost nothing of interest was built in this period. It may, however, be mentioned that the building for the National Library and Museums in Madrid, designed in 1866 by Francisco Jareño y Alarcón (1818–92) and almost thirty years in construction, while still of the most conventional Classical character as regards its façades, has convex mansards over the end pavilions of quite definitely Second Empire character. Characteristically, the Chamber of Commerce in Madrid, completed in 1893 by E. M. Repulles y Vargas (1845–1922), illustrates the general return of official architecture to still more conventional academic standards towards the end of the century. But in the seventies there began in Barcelona the career of a Spanish – or more accurately Catalan – architect, Antoni Gaudí, who was destined to produce around 1900 some of the boldest and most original early works of modern architecture. Gaudí's real links in the seventies and eighties, spiritually if not so much actually, are with the High Victorian Gothic not the Second Empire, although his earliest design reflects Espérandieu's Palais Longchamps (see Chapter 11).

The situation in the United States was naturally most like that in England. As has already been noted, a French-trained Danish architect, Lienau, prefigured the Second Empire mode in the Shiff house in New York as early as 1849–50. By the mid fifties mansards of rather modest height, often with shallow concave slopes, had appeared in Eastern cities on many houses not otherwise particularly Frenchified. Richard M. Hunt (1827–95),[8] the first American to study at the École des Beaux-Arts and actually an assistant as well as a pupil of Lefuel, returned from Paris to America in 1855. But he brought with him no lush Second Empire mode but rather the basic academic tradition of the French official world, despite the fact that he had himself worked in 1854 on the New Louvre. Although some of the earliest work of H. H. Richardson, who returned from Paris a decade later after working for several years for Labrouste's brother Théodore, was of Second Empire character, he showed himself from the first more responsive to influences from contemporary England (see Chapters 11 and 13). On the whole, the Second Empire mode, as it was practised in America through the third quarter of the century, derived almost as completely as the local Victorian Gothic from England. Most American architects were kept informed of what was going on abroad through the English professional Press, and so they naturally followed the models that were offered in the *Builder* and the *Building News* rather than those in the publications of César Daly.[9]

The Civil War of 1861–5 did not bring architectural production to a stop; indeed, it seems to have had a less inhibiting effect than the aftermath of the financial crash of 1857 in the immediately preceding years. In Washington the building of Walter's new wings of the Capitol, initiated in 1851,[10] and of his cast-iron dome, designed in 1855, continued until their completion in 1865, right through the war years at President Lincoln's express order (Plate 82A). There is nothing specifically French about this new work at

the Capitol, even though Walter had the assistance from 1855 of the Paris-trained Hunt. On the other hand, the original more-or-less Romantic Classical edifice that had finally been brought to completion in 1828 by Bulfinch after so many changes of architect was largely submerged. The new wings echo in their academic porticoes the broader portico of the original late eighteenth-century design; but the cast-iron dome (see Chapter 7), rivalling in size the largest Baroque domes of Europe, has a high drum and a Michelangelesque silhouette of the greatest boldness in contrast to the Roman saucer shape of that designed by Latrobe and not much raised in execution by Bulfinch.

It was not in Washington that the Second Empire mode was first introduced for public buildings; Washington, indeed, would never again be the centre of architectural influence that it was in the Romantic Classical period, although the new state capitols begun in the sixties and seventies were mostly capped with imitations of Walter's dome. A 'female seminary' on the Hudson River, endowed by a brewer, and the new City Hall in Boston, Mass., both dating from the opening of the sixties, are the first monumental instances of the new mode that dominated the field of secular public building until the financial Panic of 1873 brought the post-war boom to a close. James Renwick,[11] who designed the very extensive Main Hall for Matthew Vassar's new college at Arlington near Poughkeepsie, N.Y., in 1860, was specifically instructed by his client to imitate the Tuileries – not the New Louvre – and so he did in an elaborately pavilioned composition of U-shaped plan crowned by various sorts of high mansards. This overshadows in significance his earlier Charity Hospital of 1858 on Blackwell's Island in New York, already mansarded but very plain, and his Corcoran Gallery of 1859, now the Court of Claims, in Washington, with a rich but muddled façade still rather flatly conceived.

Renwick was at least as eclectic as such Europeans as Ballu and Ferstel. Having made his first reputation with the building of the Anglican Grace Church in New York in 1843–6 – if not very Camdenian, this is at least a fair specimen of revived fourteenth-century English Gothic – he continued in the Gothic line with the Catholic St Patrick's Cathedral in New York, begun in 1859 and completed (except for the spires) in 1879. That vast two-towered pile, however, is Gothic in a very Continental way, resembling Gau's and Ballu's Sainte-Clotilde in Paris and Ferstel's Votivkirche in Vienna more than anything English of the period. In the late forties Renwick had also been the agent of Robert Dale Owen's 'Romanesque Revival' aspirations in designing the Smithsonian Institution in Washington (see Chapter 6).

For such things as the Smithsonian and his churches Renwick had plenty of visual documents on which to lean, either archaeological treatises on the buildings of the medieval past or illustrations of contemporary foreign work. But for Vassar College, very evidently, he was dependent for his inspiration on rather generalized lithographic or engraved views of the Tuileries. Nor could he, at this relatively early date, borrow much from published illustrations of contemporary English work in the new international Second Empire mode. The particular plastic vitality of the Americanized Second Empire is already notable in this early example, however, even though the rather crude articulation of the red brick walls is remote from anything French of any period

from the sixteenth century to the nineteenth. Later buildings by Renwick in the same mode are richer and closer to Parisian standards, but their architectonic vitality is considerably less.

The Boston City Hall,[12] built by G. J. F. Bryant (1816–99) and Arthur D. Gilman (1821–82) in 1862–5, is a smaller but suaver edifice. Although it is a compactly planned block, the articulation of the walls by successive Roman-arched orders, coldly but competently executed in stone, is boldly plastic below the crowning mansards. However, just before this, for the Arlington Street Church of 1859–61, the first edifice erected in the Back Bay district that Gilman was just laying out,[13] he had turned not to France but to eighteenth-century England for inspiration, basing himself chiefly on the same churches by Gibbs that had been the most popular American models in later Colonial times.

A leading opponent of the Greek Revival, Gilman, like most Continental architects of the day, evidently knew better what he meant to leave behind than whither he wished to proceed. His Boston church initiated no national wave of Gibbsian church architecture; indeed, the sixties were the heyday of Victorian Gothic design for churches in the United States. His City Hall, on the other hand, set off a nation-wide programme of public building in the Second Empire mode; for Boston was now for a score of years the artistic as well as the intellectual headquarters of the country in succession to Philadelphia. In this programme municipalities, state authorities, and the Federal Government all participated actively during the decade following the Civil War. In the case of many Federal buildings, only nominally the work of the office of the Supervising Architect, where A. B. Mullet (1834–90) succeeded Rogers in 1869, Gilman acted in these years as consultant, and was probably the real designer rather than Mullet or his assistants.

These vast monuments were mostly constructed during General Grant's presidency. Parisian in intention, yet American in their materials, they are withal rather similar to Second Empire work in England. Few were completed before the mode went out of favour as changes in architectural control sometimes make evident. In the case of the New York State Capitol in Albany, for example, begun in 1868 by Thomas Fuller (1822–98) and his partner Augustus Laver (1834–98), both arriving from England via Canada, Eidlitz and Richardson took over jointly in 1875, modifying the design of the building very notably above the lower storeys towards the Romanesquoid. Thus it was finally brought to completion by them and others in the following twenty years. The very tall tower on the Philadelphia City Hall, begun in 1874 was finished over a decade later. This tower, whose crowning statue of William Penn still tops the local skyline, has hardly anything in common with the Louvre-like pavilions below; yet the whole is nominally the work of one architect, John McArthur, Jr (1823–90), the grandfather of General Douglas McArthur.

Undoubtedly the association of these prominent buildings with the unsavoury Grant administration and the fact that there were – at least in the two cases mentioned above – major financial scandals involved in their slow and incredibly costly construction played an important part in the early rejection of a mode so associated with the public vices

of the decade after the Civil War. Not many of them are extant today other than the Boston, Albany, and Philadelphia structures just mentioned and the old State Department Building in Washington (Plate 82B).

In New York, Boston, and other large cities the vast granite piles in this mode that long served as post offices are all gone. In Chicago the Cook County Buildings built by J. J. Egan in 1872–5 have also long since been replaced. In San Francisco Fuller & Laver's extensive group of Municipal Buildings was destroyed in the fire that followed the earthquake of 1906. This must have been the largest, the richest, and plastically the most complex production of the whole lot, with its triangular site, boldly articulated massing, and central dome.

Though threatened by every new administration, the State, War and Navy Department Building built by Mullet in 1871–5 still stands, overshadowing the nearby White House. This is perhaps the best extant example in America of the Second Empire – or as it is sometimes called locally, the 'General Grant' – mode (Plate 82B). The tiers of Roman-arched orders in fine grey granite, borrowed by Gilman as consultant architect and presumptive designer from his earlier Boston City Hall rather than from Paris, tower up storey above storey to carry mansards of various different heights above the complex pavilioned plan. Cold and grand, almost without sculptural decoration, this could hardly be less like the New Louvre or the old Tuileries in general texture; nor is there any of the playful semi-Gothic detail of Knowles's and Giles's London hotels or of the festive colouring and lush ornamentation of Brodrick's at Scarborough.

The contrast of the old State Department Building with its *pendant* on the other side of Lafayette Square, Mills's Grecian Treasury, finally completed by Rogers a decade earlier, is shocking to most people. Yet it is fascinating to read here the representational aspirations of an age that found its most significant expression, not in its public buildings, but in the new skyscrapers which first rose in New York at just this time, Hunt's Tribune Building and the Western Union Building by his pupil George B. Post. Both, incidentally, were heavily mansarded, and the one by the American-trained Post was much more typically Second Empire than is the French-trained Hunt's (see Chapter 14).

In urban domestic architecture, both on large mansions and on the more usual terrace houses, mansards became characteristic but not ubiquitous in the late fifties and remained so down to the mid seventies and even later in the West. Boston's Back Bay district, laid out by Gilman in 1859, has a few mansions along Commonwealth Avenue that resemble somewhat the *hôtels particuliers* of Paris, and also several mansarded terraces by Bryant & Gilman and other architects in that avenue and in Arlington and Beacon Streets. The materials used are un-Parisian – brownstone like Gilman's nearby church or dark-red brick with brownstone trim – and the detail is rarely very plausibly French. In general, inspiration still came from London, even if nothing so extensive and spectacularly monumental as Grosvenor Place and Grosvenor Gardens was ever produced. In New York Lienau's finest terrace, that built in Fifth Avenue between 55th and 56th Streets in 1869, was rather more sumptuous than the Boston examples, being of white marble with very literate ranges of superposed orders. Hunt's New York work was often so authentically Parisian as quite to lack the bombast of the international

Second Empire mode. Especially interesting are his Stuyvesant Flats in 18th Street, New York, of 1869–70. This block was a very early example of an apartment house of the Parisian sort in America, where they did not generally flourish much before the late eighties.

For the more characteristic free-standing houses that were built outside cities, in suburbs, in towns, and even in the country, the Second Empire mode was also very popular. Interpreted in wood, painted brown or grey stone colours, these have a distinctly autochthonous character. Generally symmetrical and tightly planned, they did not advance the development of the American house in the way of the rival 'Stick Style'; but in their emphasis on complicated three-dimensional modelling, especially the modelling of the roofs, they prepared the way for one important aspect of the later and more original 'Shingle Style' (see Chapter 15).

The Second Empire episode in the United States is a curious one. On the one hand, it was a consciously 'modern' movement, deriving its prestige from contemporary Paris, not from any period of the past like the Greek, the Gothic, or even the Renaissance Revivals – of which last, of course, it was in some limited sense an heir. On the other hand, the considerable originality of the mode as it was actually employed was largely unconscious and due to the lack of accurate visual documents, or even a codified body of precedent, to be followed. At this time contemporary conditions demanded, as in Europe, the construction of many public edifices, Federal, state, and municipal, to house a complexity of functions. It would have been almost impossible to compress these within the rigid rectangles of the Greek Revival even had the Greek Revival not already been rejected by most critics twenty years or more earlier.

Yet the Second Empire episode was necessarily brief, lasting little more than a decade. The crass assurance it reflected, particularly the special arrogance of the post-war politicians in Washington, the state capitals, and the other big cities, was much shaken by the Panic of 1873. It did not therefore, as in much of Europe, continue in America into the eighties and nineties.

The episode has a longer-term significance, nevertheless. Slight as was the actual relationship to the Second Empire mode of the first two Americans to be trained at the École des Beaux Arts, Hunt and Richardson, their personal influence and their prestige encouraged a growing trek of architectural students to Paris; their recommendations alone would hardly have had much effect had not fashion already established Paris rather than London in the public mind as the centre of modern architectural achievement and inspiration. From the early eighties on, the long-maintained dependence on England in architectural matters began to be notably weakened; for a generation and more very many American architects would seek their roots abroad, but henceforth in France, or even Italy, not England.

It is not surprising that in the British Dominions there was no such direct French influence in this period as in Latin America. Urban entities like the Colmena and its terminal square in Lima, Peru, pavilioned and mansarded throughout, rival European examples like the Søtorvet in Copenhagen or the Galerij in Amsterdam. Before they gave way to skyscrapers, the *hôtels particuliers* along the Paseo de la Reforma in Mexico

City were more numerous and more plausibly Parisian than along Commonwealth Avenue in Boston or Bellevue Avenue at Newport. But both in Canada and in Australia the Second Empire mode arrived from England late and in a more corrupted form than in the United States. The mansarded Windsor Hotel in Montreal hardly rivals the Palmer House of 1872 in Chicago by J. M. Van Osdel (1811–91), to which the rich merchant Potter Palmer was as proud to give his name as to the incredible fake castle that he built for his own occupancy a decade later. The Princess Theatre in Melbourne, Australia, built by William Pitt in 1877, with its three square-domed mansards, has an appealing nonchalance, like that of the contemporary edifices of the mining towns high in the American Rocky Mountains – the hotel in Virginia City, Nevada, that has been mentioned earlier, or the much more modest Opera House in Central City, Colorado, for example. But the public architecture of the third quarter of the century in Australia was more restrained in design just because it was generally so very retardataire.

The Parliament House in Melbourne, begun in 1856 by J. C. Knight and completed in 1880 by Peter Kerr, has a very literate and even academic monumentality, its giant colonnades recalling a little those of Brodrick's contemporary Town Hall in Leeds. The Treasury Buildings in Melbourne, completed by J. Clarke in 1862, are also competently designed and not unworthy of comparison with High Renaissance work of the period in Vienna. Other public buildings of the sixties and seventies are of more definitely Victorian character, but Early Victorian rather than High. For example, Wardell's Government House of 1872–6 in South Melbourne is a towered Italian Villa consciously modelled on Queen Victoria's Osborne House of a generation earlier. Both in Australia and in Canada the Victorian Gothic had more vitality in this period (see Chapter 11).

There is little profit in pursuing farther in the outlying areas of the western world evidence of direct influence from Paris (of which there is, for example, some in Russia) or autochthonous variants of the Second Empire mode. In this generally rather unrewarding period the best work mostly falls under the High Victorian Gothic rubric, or else it illustrates specifically the development of commercial and domestic architecture in the Anglo-American world (see Chapters 10 and 11; 14 and 15). In an attempt to give an over-all picture too many buildings of low intrinsic quality and little present-day interest have already been cited.

What makes especially difficult the proper historical assessment of the widespread influence of Paris in the decades following 1850 is that this influence, whether direct or indirect, rarely produced buildings on the Continent of real distinction or even of much vitality. Only in England and the United States, where the mode was quite reshaped by a different cultural situation and the bold use of local materials, is it of much independent interest. The more plausibly Parisian the work outside France, the less vigour it usually possesses. Some of it can be very plausible indeed, as for example the street architecture of Mexico City and Buenos Aires, even if what appears to be carved French limestone in the Argentine capital is usually but a triumph of imitative craftsmanship on the part of stucco-workers imported from Italy. In general, Mexican and Argentine Second Empire is very dull, as dull as in Belgium, say, with no Poelaerts to redress the balance. Yet along the Malecón in Havana, Cuba, where the traditional

galleried house-fronts were re-interpreted in a generically Second Empire way with Andalusian lushness, the results are much more notable, not least because the soft local stone has been very richly weathered by the strong sea breeze. As was mentioned earlier, the use of *azulejos* in extraordinary tones of brilliant green and purple gives autochthonous character to similar work at Rio de Janeiro in Brazil.

The international Second Empire mode has so far found no historian or even a sympathetic critic. Perhaps no other mode so widespread in its acceptance and so prolific in its production has ever received so little attention from posterity. Yet beside it the contemporary stream of the Victorian Gothic mode, which has been recurrently studied, must seem more than a little parochial and also excessively dependent on the individual capacities – not to say the caprices – of its leading practitioners. Within the areas in which the Victorian Gothic was employed, however, an area effectively confined to the Anglo-Saxon world geographically and to certain kinds of building typologically, it was capable of major architectural achievement. Moreover, thanks to the line of spiritual descent from the leaders of the generation of architects active in the third quarter of the century to those of the next, the more creative aspects of the architecture of the turn of the century derive in not inconsiderable part from the later Victorian Gothic.

The Lefuels and Försters, or men like Brodrick, Poelaert, and Gilman, trained no worthy pupils. But the disciples of the Victorian Gothic leaders not only include such very able young men who actually worked in their offices as Webb and Shaw and Voysey but also, in some sense at least, so great an American architect as Richardson, whose formal training had been wholly Parisian (see Chapters 11, 12, and 13). The advance of domestic architecture in the second half of the nineteenth century and, to a somewhat lesser extent, also that of commercial architecture owed a great deal to the Victorian Gothic (see Chapters 14 and 15).

CHAPTER 10

HIGH VICTORIAN GOTHIC IN ENGLAND

By 1850 Neo-Gothic was accepted as a proper mode for churches throughout the western world. Only in England, however, had it become dominant for such use. Moreover, Gothic was a more than acceptable alternative there to Greek or Renaissance or Jacobethan design for many other sorts of buildings also. Only in the urban fields of commercial construction and of terrace-housing was its employment still very rare. On the Continent the nearest equivalent in popularity and ubiquity to the Victorian Gothic was the German *Rundbogenstil*. Neo-Gothic, although used more and more everywhere after 1850 for churches, attracted few architectural talents of a high order (see Chapter 11).

There are several reasons why the Gothic Revival was able in England, and almost only in England, to pass into a new and creative phase around 1850. One was certainly the ethical emphasis of its doctrines, an emphasis more sympathetic to Victorians than to most Europeans of this period, but not without its effect on the Continent towards the end of the century. Another reason was the informality, not to say the amateurishness, of architectural education in Britain, encouraging personal discipleship and the cultivation of individual expression rather than providing for the continuation of an official tradition.

Related to this is the private character of architectural practice in England as compared to its more public responsibilities and controls on the Continent. The desirable professional positions in France, and to almost the same degree in many other European countries, were those offered by the sovereign or the State. But after the time of Soane and Nash official employment ceased to carry either prestige or opportunity in England, the Houses of Parliament notwithstanding – it was not Barry's work there but his clubs and mansions that established his high professional reputation. As in the eighteenth century, a social and aesthetic *élite* still provided both public esteem and the most desirable commissions for Victorian architects; by 1850 a large part of that *élite* was very church-minded and thoroughly Gothicized. Not until the mid sixties was there any significant change; even then those responsible for this change, both the architects and their patrons, had all been brought up in the Gothic Revival tradition.

The High Victorian Gothic opened with the building of a London church. All Saints', Margaret Street, designed in 1849, largely completed externally by 1852, and consecrated in 1859, was the result of no imperial fiat, like the Votivkirche in Vienna or the big churches of the sixties in Paris, nor did it occupy like them an isolated site approached by wide new boulevards. Intended as a 'model' church by its sponsors, the Ecclesiological Society, and financed by private individuals, All Saints' is set in a minor West End street at the rear of a restricted court flanked by a clergy house and a school (Plate 86A). But for its tower, the tallest feature of the mid-century London skyline, it would be hard to find; but once found, it could never be ignored.

The architect of All Saints', Butterfield, had been for some years, together with Carpenter, the favourite of the ecclesiologists because of the Pugin-like 'correctness' of his revived fourteenth-century English Gothic. Now, quite suddenly, he and his sponsors embarked on new paths. As soon as the walls began to rise, their startling character became apparent; for the church is of red brick, a material long out of use in London, and that red brick is banded and patterned with black brick, a theme varied on the tower by the insertion of broad bands of stone. 'Permanent polychrome', achieved with a variety of materials, thus made its debut here. In the interior, moreover, the polychromatic effect was even richer and more strident, with marquetry of marble and tile in the spandrels of the nave arcade and over the chancel arch, not to speak of onyx and gilding in the chancel itself (Plate 85). The very exiguous site forced any expansion upwards; the nave is tall, the vaulted chancel taller, and the subsidiary structures flanking the court are even higher and narrower in their proportions.

While the construction of All Saints' proceeded there was much concurrent and complementary activity in the English architectural world. In 1849 a young critic, John Ruskin (1819–1900), had brought out an influential book, *The Seven Lamps of Architecture*, in which many of the recommendations ran parallel to, if indeed they did not influence, Butterfield's latest stylistic innovations. Notably, Ruskin urged the study of Italian Gothic: if All Saints' is, in fact, not specifically Italian in the character of its polychromy, it seemed so to most contemporaries. The real foreign influences here, as in the profile of the fine plain steeple, are German if anything. Butterfield's moulded detail continued to follow quite closely English fourteenth-century models.[1]

In this same year 1849 Wild [2] was building on an even more obscure London site in Soho his St Martin's Northern Schools with pointed arcades of brick definitely derived from Italian models. Moreover, he was being acclaimed for doing this by the very ecclesiological leaders who had ten years before condemned his Christ Church, Streatham, as 'Saracenic'. With the publication of the first volume of Ruskin's next book, *The Stones of Venice*, in 1851 (the two less important later volumes came out in 1853) and the appearance of *Brick and Marble Architecture of the Middle Ages in Italy* by G. E. Street (1824–81) in 1855, Italian influence increased. Street's name, moreover, introduces the third of the three men most responsible for the sharp turn that English architecture was taking in the fifties.

Without depending on polychromy, Butterfield designed in 1850 and built in 1851–2 St Matthias's off Howard Road in Stoke Newington, a suburban London church of equally novel character. Unconfined by a closed-in urban site, this also showed in its great scale and the bold silhouette of the gable-roofed tower – still standing today above the bombed ruin of the church – how the timid Early Victorian Gothic of the forties could be invigorated. Moreover, at St Bartholomew's at Yealmpton in Devonshire, built in 1850, Butterfield introduced in a country church striped piers of two different tones of marble and considerable coloured marquetry work. A former fellow assistant of Street in G. G. Scott's office, William H. White (1826–90), at All Saints' in Talbot Road, Kensington, in London, begun in 1850, also used the new polychromy that soon became the principal, though by no means the only, hallmark of High Victorian Gothic.

A large country house of stone by S. S. Teulon (1812–73), Tortworth Court in Gloucestershire, built in 1849–53, has no polychromy, although its architect was soon to be the most unrestrained of all in its exploitation. His patrons, moreover, would be notably 'lower' in their churchmanship than the members of the Ecclesiological Society who employed Butterfield. But in the boldly plastic massing of Tortworth, leading up to a tall central tower of the most complex silhouette, Teulon exemplified the new architectural ambitions, ambitions that would soon be finding as striking expression in secular work as in ecclesiastical building whether 'high' or 'low'.

Street had been a favourite of the High Church party since he first began building small churches and schools of a most 'correct' sort in Cornwall on leaving Scott's office. He was also the author of several critical articles published in *The Ecclesiologist*, notable for their cogency. In these he commented, for example, on the applicability of the arcades of Wild's school to commercial building; he also attacked the curious habit of the forties, most prevalent with the ecclesiologists, of designing urban churches on confined sites as if they were to sprawl over ample village greens. Street began his first important church with associated school buildings, All Saints' at Boyne Hill near Maidenhead, in 1853. Here he employed red brick and almost as much permanent polychrome as Butterfield at All Saints', Margaret Street. He also handled the detail, particularly on the schools, with something of the same sort of brutal 'realism' (to use the catchword of the period) that Butterfield used on his subsidiary buildings.

In the same year in London Street's former employer Scott, long established as the most successful, if hardly the most 'correct', of Early Victorian Gothic practitioners, and since 1849 Architect to Westminster Abbey, built in Broad Sanctuary contiguous to the façade of the Abbey a Gothic terrace. That the use of Gothic should have been encouraged here by the Abbey authorities is not surprising. But they themselves may well have been surprised at what their architect produced; for this is no flat range of Neo-Tudor fronts in stock brick, but a plastic mass of stonework bristling with oriels and turrets and capped with a broken skyline of stepped gables. Nothing here recalls the rather French thirteenth-century Gothic of the Abbey itself; instead the effect is Germanic, recalling the medieval houses of the Hansa cities. The work was executed with a boldness of scale doubtless less personal in character than Butterfield's or Street's, but quite as striking to the casual observer.

Scott's houses had little influence, however. Gothic terraces were no more popular in the fifties and sixties in England than in the preceding decades. In residential districts the flood of more-or-less Renaissance stucco continued to spread, little affected by the High Victorian Gothic. As we have seen, the Second Empire mode also had only a very limited success in this field of construction, a field dominated not by architects but by builders.

In 1853 G. G. Scott provided for the Camden Church in the Peckham Road in South London – Ruskin's own family church – a new east end in a round-arched and banded medievalizing mode; Ruskin himself collaborated on the window design, or so it is said. There is sufficient Gothic 'realism' in the detail here to justify considering this a round-arched variant of the High Victorian Gothic; but it is definitely of Italian inspiration,

It seems also to be related to the later *Rundbogenstil* of this decade in Germany and Austria; nor is it altogether without resemblance to such a contemporary French church as Vaudoyer's Byzantinesque cathedral of Marseilles.

Several far more important and better publicized interventions in architecture on the part of Ruskin followed immediately. In considerable part because of his personal influence with Oxford friends, the Gothic design of the Irish architects Sir Thomas Deane [3] (1792–1871) and Benjamin Woodward (1815–61) was accepted for the University Museum at Oxford in 1855. Woodward had already proved himself a would-be Ruskinian in detailing their design of 1853 for the Museum of Trinity College, Dublin, in a Venetian (though largely *quattrocento*) way. As the Oxford Museum rose to completion in the next four years, Ruskin was in continuous contact with Woodward, providing himself the design for at least one window as well as encouraging the delegation to the Irish carvers of much of the responsibility for the ornamental decoration – of which only a small part was, in fact, ever executed. The work of the O'Sheas is better appreciated in Dublin, where the decoration both of the Trinity College building and of the Kildare Street Club of 1861 was carried out by them in a very free and yet boldly naturalistic vein.

The most interesting feature of the University Museum – and one that it is surprising to find Ruskin, who hated iron and all it stood for in the nineteenth-century world, involved with – is the court, with its roof of iron and glass (Plate 86B). How different this is, however, from what iron-founders without architectural control were providing at the same time in the Brompton Boilers! Yet it is even more different from Hopper's or Rickman's iron Gothic of fifty years earlier (Plate 60B). For all the elaboration of the ornament, which is very metallic in character but also very aware of Early Gothic precedent, what is most notable is the highly articulated character of the structure, as if the architects had asked themselves: 'How would medieval builders have used structural iron had it been readily available to them?' Is this, perhaps, the first echo in England of the theories of Viollet-le-Duc, the French architect who was to exercise an international influence equal to Ruskin's over the next generation? Probably not, as his own enthusiasm for iron began only rather later (see Chapter 16). Whether or not there is specific influence from Viollet-le-Duc here, his great archaeological publication, the *Dictionnaire raisonné*,[4] had begun to appear the year before. Very soon the structural expressiveness of 'Early French' detailing, studied by English architects at first hand as well as in the woodcuts of the *Dictionnaire*, began to supplant Italian polychromy as the hallmark of advanced fashion in the higher aesthetic circles.

A more modest Oxford building by Deane & Woodward, the Union Debating Hall of 1856–7, has more vigour on the whole than does the Museum, particularly in its characteristically notched brick detailing. It also has the advantage of murals by the young Pre-Raphaelites. One of these, who had just left Street's architectural office to turn briefly to painting, was William Morris (1834–96).[5] His ceiling here initiated the most distinguished career of architectural decoration of the second half of the century. Morris as a critical writer was destined, moreover, to be at least as influential on later architecture as Ruskin or Viollet-le-Duc.

Of the same date, 1856, is perhaps the most successful of Butterfield's extant churches, that at Baldersby St James near Beverley in Yorkshire, with its contiguous group of vicarage, schools, and cottages. All of stone externally, the polychromy here is rather a sort of 'poly-texture' most effectively handled in the banding of the tall pyramidal spire above the plain square tower (Plate 87). Internally a delicate harmony of pink and grey-blue bricks, with accents of creamy stone, replaces the acid chords of All Saints' in London, a harmony rivalled in the Welsh church of St Augustine's at Penarth near Cardiff built a decade later in 1866. At the same time, Teulon at St Andrew's in Coin Street off Stamford Street south of the Thames in London was using the boldest of brick-and-stone banding externally and, inside, elaborate patterns of light-coloured brickwork. Moreover, the rather Germanic planning of this church, demolished since the Second World War, was highly unorthodox by ecclesiological standards. Already it was evident that within the High Victorian Gothic there were to be two streams, one High Church in its patronage and led by architects of considerable learning and sophistication like Butterfield and Street, another more characteristically Low Church and often quite secular; this was generally coarser and more philistine, not to say outright illiterate.

Yet not all the best work of the High Church architects was ecclesiastical. By 1857 J. L. Pearson (1817–97) had already built some respectable if not very interesting churches distinguished chiefly by their very fine spires; but his first work of positive High Victorian character was Quar Wood, a country house he built in Gloucestershire in that year. The skilful asymmetrical massing around the stair tower here, the plastic variety provided by several different types of steep roofs, the crisp precision of the detailing, all combine to produce a modest mansion that is as different in effect from Teulon's mountainous Tortworth as both are characteristic of the beginnings of the High Victorian Gothic.

Two houses begun soon after Quar Wood, both within the broad frame of reference of the maturing High Victorian Gothic, could hardly differ more from one another. In remodelling Eatington Park in Warwickshire in 1858 John Prichard (1818–86) attempted to mask an underlying Georgian mansion with a profusion of bold innovations in the detailing. Stone polychromy, applied sculpture, bold plastic membering of wall, roof, and chimneys, all are used here more abundantly than ever before. The Red House at Bexley Heath in Kent, on the other hand, which Philip Webb (1831–1915), who had been a fellow pupil with Morris in Street's office, built for Morris in 1859–60, is notable for its extreme simplicity. So also is the house now known as Benfleet Hall that he built in 1861 at Cobham in Surrey for Spencer Stanhope, another of the young artists who had collaborated on the murals of the Oxford Union. This has a rather better plan than the Red House.

These houses have no polychromy, only walls of plain red brick beautifully laid; there is no sculptured detail at all; and the few breaks in the loose massing of the walls and roof are closely related to the informal ease of the rather novel plans. Only the high roofs of red tile are similar to those of Pearson's Quar Wood. But in the plain, very 'real', detailing and the segmental-headed white-painted window-sash of the early eighteenth-century sort, set under pointed relieving arches, the relationship is close to

the secular work of somewhat older men – to Butterfield's vicarages of the forties (Plate 122B) and more notably to his clergy house and school at All Saints', Margaret Street (Plate 86A). Webb had himself worked on some of the latest of the rather similar vicarages and schools that Street had been building for a decade. His first big country house, Arisaig, built of local stone in the remote Scottish Highlands forty miles beyond Fort William in Inverness-shire beginning in 1863, may properly be considered High Victorian Gothic also (Figure 23). It is especially interesting, like Benfleet Hall, for its plan (see Chapter 15).

Down to about 1860 the development of the High Victorian Gothic was on the whole convergent. Henceforth, not only did young architects try more and more to have intensely personal modes like Butterfield's, they also tended to form loose stylistic alliances so that individual expression became lost in various types of group expression. The boldest and the most unruly were no longer likely to be of the High Church party, but rather of the Low. St Simon Zelotes of 1859 in Moore Street in London by Joseph Peacock (1821–93) hardly compares with the work of Butterfield and Street in distinction. But its internal polychromy of white and black brick outbids that of their best London churches, also built at the end of this decade.

Butterfield's St Alban's in Baldwin's Gardens off Holborn in London, built in 1858–61, is a ruin today. But something of its splendidly tall proportions as well as the rich brick and tile marquetry over the chancel arch can with difficulty still be apprehended. The contrast in quality with Peacock's work is amazing. Street's church of St James the Less in Thorndike Street off the Vauxhall Bridge Road in London, also of 1858–61, is less fine but still much superior to Peacock's work (Plate 94B). The tall square tower, set apart like a campanile, has a curiously gawky roof based on a Genoese model and the interior is somewhat cavernous. But in the richness of its red and black brick patterns, used both inside and out, and in the naturalistic carving of the nave capitals this church of Street's rivals Butterfield's All Saints' and St Alban's and is, moreover, still completely intact.

Various younger men of Webb's generation were beginning to make important contributions in church design also. G. F. Bodley (1827–1907), trained in his kinsman Scott's office rather than in Street's, built St Michael's, Brighton, in 1859–62. This must have been very striking for the boldness of its scale and for the vigour of its structural expression before it was overshadowed by the tall later nave beside it added by William Burges (1827–81).[6] But it is not the parody of 'Early French' detailing in the square archivolts and spreading capitals of the nave arcade, so soon to be abjured by Bodley, that is significant here but the fact that this was the first church to receive an over-all decorative treatment, including stained glass, at the hands of Morris and his associates, who included the painters Ford Madox Brown and Sir Edward Burne-Jones.

There is still finer glass of this period designed by Burne-Jones in the east window of Waltham Abbey in Essex, where the rear wall was rebuilt in the heaviest 'Early French' taste by Burges in 1860–1. As a painter Burne-Jones is hardly to be compared with Ingres; yet as a designer of stained glass the superiority of such early windows of his as these at Waltham Abbey to the ones by Ingres at Dreux and at Neuilly is amazing.

It is not the least claim to distinction of the High Victorian Gothic that it nurtured this brilliant revival of decorative art led by Morris. Many churches of the sixties and seventies are worth visiting solely for their windows by Morris, Brown, and Burne-Jones, to which there are no Continental parallels.

A quite different sort of contemporary church is White's Holy Saviour, Aberdeen Park, in London, of 1859. Externally this is quiet and rather shapeless; but inside the red brick of the exterior gives way to a subtle harmony of patterned brickwork in beiges, browns, and mauves – assisted in the chancel by some additional decorative painting – that is unequalled in High Victorian polychromy. Also rather different from standard High Church Anglican work of the day is the Catholic church of St Peter in Leamington of 1861–5 (Plate 89A) by Henry Clutton (1819–93). He had won the competition for Lille Cathedral in France in 1855 with a design prepared in collaboration with Burges, but was not allowed to supervise the construction because he was a Protestant; English Roman Catholics were not so bigoted. Internally the characteristic articulation of Puginian planning was given up; nave and apse form one continuous vessel, almost basilican in effect, under a barrel roof that ends in a half dome. Unfortunately, the painted decoration of the walls and the ceiling here has all been destroyed; the effect must once have been much less barren than it is today. Externally, plain red brick is most happily combined with stone trim treated with great simplicity and yet with extreme subtlety. The inspiration is Early French, perhaps influenced by Viollet-le-Duc,[7] although Clutton knew old French work at first hand; but the smooth concavities and the delicately varied chamfers are handled with the greatest originality and justness of scaling. The fine tower, at once sturdy in its detailing and svelte in its shape, has lost the original pyramidal roof.

Not unworthy of the church, and vastly superior to Clutton's rather dull country houses, is the contiguous rectory here, a rectangle in plan with the long gable broken only by elegantly chamfered pairs of brick chimneys (Plate 89A). The expanses of plain brick wall are regularly but not symmetrically pierced by coupled windows divided by colonnette mullions of stone. In simplicity of massing this rectory surpassed the Red House and Webb's other – and in some ways better – early house for Spencer Stanhope, Benfleet Hall. In their simple dignity such things contrast sharply with the more ambitious secular work of the day, by this time reaching peaks of elaboration almost exceeding Prichard's Eatington Park.

Teulon's Elvethan Park in Hampshire of 1861, for example, was perhaps the wildest of all High Victorian Gothic houses; this mansion was so complex in composition and so varied in its detailing that it quite defies description. Polychromy ran riot, forms of the most various but undefinable Gothic provenience were merged into one another, and the result seemed to illustrate that original mode of design which Thomas Harris (1830–1900) [8] had just christened 'Victorian' in describing a project he published in 1860 for a terrace of houses at Harrow.

However, several churches of the mid sixties rival Elvethan Hall, if not Harris's 'Victorian Terrace'. There is, for example, Teulon's own St Thomas's, Wrotham Road, of 1864, piling up to its heavy central tower among the railway yards of Camden Town

in London; and there is also his much more peculiar St Paul's, Avenue Road, also of 1864, in the approaches to Hampstead. This was purged internally of its original decoration some years ago but it remains externally an almost unrecognizable variant of the standard Victorian Gothic church despite its present abandoned state. At St Mary's in the London suburb of Ealing, built in 1866–73, Teulon used iron columns for the nave arcade; a still wilder Low Church architect, Bassett Keeling (1836–86), did the same in two London churches, St Mark's in St Mark's Road, Notting Dale, and St George's on Campden Hill (where they have since been replaced), both begun in 1864. Nor were Teulon and Keeling by any means the only architects to revive the use of iron columns in the sixties; even Burges introduced them once in a church, St Faith's at Stoke Newington, now largely demolished, and also in his Speech Room at Harrow School of 1872.

Of a quite different order is another London church, St Martin's in Vicars Road, Gospel Oak, also begun in 1864. This is by E. B. Lamb (1805–69), an architect who had already begun to show rather High Victorian tendencies in the thirties. There is no polychromy here, and the inspiration from the past is neither Italian nor French but the still heterodox English Perpendicular. The massive plasticity of Lamb's personal mode, with much large-scale chamfering and a consistent use of segmental-pointed arches in several orders, is happier where it was exploited more simply on the nearby rectory. The interior of his church, which has a sort of central plan with wide transepts and only a slightly prolonged nave, is a forest of timberwork ingeniously bracketed and intersected in a fashion peculiar to Lamb. Only perhaps in an international context, in relation to the contemporary American 'Stick Style', is this sort of structural articulation intelligible (see Chapter 15). But the solid, compactly planned, and simply detailed rectory has virtues not unworthy of comparison with Clutton's at Leamington, if not perhaps with Webb's more delicately scaled and functionally articulated early houses.

Two churches by Street, St John's at Torquay of 1861–71 [9] and St Philip and St James's at Oxford, which was completed in 1862, are more standard products of the early sixties. The former is notable for the very rich marble polychromy in the chancel and the full complement of windows by Morris and Burne-Jones; the latter is more 'Early French' with a tall tower rising in front of the polygonal apse and a curiously unorthodox but effectively 'real' way of running the nave arches into the east wall with no imposts at all. This device was repeated at All Saints', Clifton, now a ruin, where the variety of colours of the fine local stones – orange and blue Pennant and cream Bath – permitted a more truly structural polychromy than usual and one of remarkable tonal harmony and elegance. All Saints' was begun in 1863.

Both Burges and Pearson erected distinguished churches at this time, Burges in Ireland, Pearson in London. St Finbar's Church of Ireland Cathedral in Cork, designed in 1863 for a competition and built in 1865–76, is of unusual size for a British church of this period and, what is more unusual for a nineteenth-century cathedral, it was completed without serious modification of the original project. Provided with a fine open site and a full complement of towers, two flanking the west front and a taller one over the crossing, this rivals in elaboration the big Continental Gothic churches of the period

(see Chapter 11). Moreover, the detailing is of a distinctly French twelfth-century order with very few eclectic or Italianate touches, thus recalling the winning design for Lille Cathedral that he had prepared with Clutton in 1855. Yet the contrast with contemporary Continental Gothic – even with Lille Cathedral as it was finally executed by others – is almost as great as in the case of the rather more original English churches of this period by Butterfield or Street.

In the interior of St Finbar's Burges developed the theme of articulation, a theme more characteristically Early English than 'Early French', with remarkable plastic vigour, while the handsome wooden roof, so rare a feature in medieval France, lends to the whole an unmistakably Victorian air. Less subtle, less aesthetic, than other churches of the sixties by younger men, St Finbar's has the sort of athletic strength that is characteristic of much High Victorian Gothic, expressed in unusually literate, not to say archaeological, terms.

Burges's church opened the road again towards a more 'correct' imitation of the medieval High Gothic, a road along which Pearson soon proceeded more rapidly and more doggedly than he. Yet Pearson's own South London church of 1863–5, St Peter's in Kennington Lane, Vauxhall, is more typically High Victorian than St Finbar's. The rich carving of the capitals and the heavy scaling of the other stone detail are 'Early French' in character. But the walls are of London stock brick and there is some polychromy of the quieter, less Butterfieldian, sort resembling a little White's at St Saviour's. The continuity of the chancel and rounded apse with the nave echoes the 'unified space' of Clutton's Leamington interior. Puginian articulation of plan and mass were henceforth somewhat out of date with the leading younger architects.

The Albert Memorial [10] in Hyde Park in London is a monument generally – and not unjustly – considered the perfect symbol of this High Victorian period, more perfect than the Houses of Parliament (in the early sixties at last approaching completion) were of the previous Early Victorian period. In 1861 Queen Victoria's beloved husband, the Prince Consort, died. In the competition for a national memorial to rise in Hyde Park near the site of the Crystal Palace, held the next year, G. G. Scott almost inevitably won first place. Construction of the Albert Memorial began in 1863 and took nearly ten years. By the time it was completed in 1872 critics of advanced taste were already condemning it, yet it represents precisely what Scott most liked to do and what he undoubtedly did best – in his own words, this his 'most prominent work' represented his 'highest and most enthusiastic efforts'. It is, moreover, an epitome of the aspirations [11] that were most widely held when it was designed (Plate 90).

The contrast between this elaborate shrine and Scott's modest and essentially archaeological Martyrs' Memorial of 1841 at Oxford is very great – what a long distance the English Gothic Revival had travelled in a score of years! Among Early Victorian memorials the Prince Consort's cenotaph is rather more like Kemp's Scott Monument in Edinburgh (Plate 51) than like the Oxford one. But where Kemp's is soft and monochrome, this is hard and almost kaleidoscopically polychromatic. Scott's theme is still that of the fourteenth-century English Eleanor Crosses, as is certainly appropriate for a monument to a Royal spouse; but the inspiration came in the main

from relatively small reliquaries and other medieval works executed in metal and embellished with enamels and semi-precious stones.

The Martyrs' Memorial was purely English, the specific precedents for the Albert Memorial mostly Continental: Italian, French, German, and Flemish. The materials are cold and shining, polished granites, marbles, and serpentines of various colours; and much of the detail is executed in gun-metal left plain or gilded. A profusion of white marble sculpture at various scales leads up to the seated bronze figure of the Prince by J. H. Foley, finally installed in 1876, over which is a vaulted canopy of brilliantly coloured glass mosaic. Enamels, cabochons of marble or serpentine, and intricately crisp detail of the most metallic character carry out Scott's basic idea of a ciborium enlarged to monumental scale.

Beside the Albert Memorial most of Scott's other work of this period lacks interest. His churches, particularly, are likely to be dull and respectable, reflecting the new eclectic tastes of the day only in a rather inconspicuous way. His Exeter College Chapel at Oxford of 1856–8 is a sort of Sainte-Chapelle; St John's College Chapel at Cambridge of 1863–9 is equally monumental but somewhat less French in character and also more original in its proportions. His secular work at Oxford and Cambridge is also dull, lacking the Ruskinian touches that give a certain vitality to the Meadow Buildings built for Christ Church in 1863 by Sir Thomas Deane and his son Thomas Newenham Deane (1828–99).

Far finer, however, is their Kildare Street Club in Dublin, facing the Trinity College Museum across an expanse of lawn; for this continues the best Ruskinian tradition of the work that they did earlier with Woodward.[12]

A very striking example of the Gothic of the early sixties in England, superior to anything at Oxford or Cambridge, is the Merchant Seamen's Orphan Asylum of 1861 by G. Somers Clark (1825–82), now the Wanstead Hospital, in a suburb north-east of London. This is actually more what is supposed to be 'Ruskinian', because of its Venetian detailing, than the very original Dublin clubhouse with its consistent theme of segmental arches and its bold naturalistic carving; but, like that, the Wanstead building is generically High Victorian in the asymmetrical massing, the strong colours of the black-banded red brickwork, and the surprising richness of the decoration Clark lavished on a utilitarian structure.

In the early sixties several younger men, most of them trained in Street's office, were already turning away from the stridency of the work of the High Victorian leaders towards a simpler and suaver mode. Webb's houses of this period have been mentioned, and will be again (see Chapter 15). Here the plain row of small London shops that he built at 91–101 Worship Street, Finsbury, in 1861 might be described. In them the material is not even red brick, but London stocks excellently laid. Almost nothing is overtly Gothic, yet a sense of medieval craftsmanship controls the handling of both the wide shop-windows below and the sash-windows in the upper storeys. Above all, the general composition is quiet and regular, more like Clutton's Leamington rectory than the asymmetrical articulation that is characteristic of Webb's own houses of these years.

A similar quietness controls the design of the wing that W. Eden Nesfield (1835–88),

son of Barry's collaborator on Italian gardens, William A. Nesfield (1793–1881), and a pupil not of Street but of Burn and Salvin, was adding to the Earl of Craven's seat, Combe Abbey in Warwickshire, beginning in 1863. This was Nesfield's earliest work. Despite his own studies of French Gothic,[13] which he had published the previous year with a dedication to Lord Craven, and the tracings he is supposed to have made from the illustrations of Gothic detail in Viollet-le-Duc's *Dictionnaire*, the arches at Combe Abbey are round, not pointed, and the major architectural theme is the English late medieval 'window-wall' of many lights divided by stone mullions and transoms.

In a completely new house, Cloverley Hall, that Nesfield began in 1865 together with his partner Richard Norman Shaw (1831–1912), the great window-bays and the other ranges of stone-mullioned windows in the beautifully laid salmon-pink brick walls were even more the principal theme of the design. But in the decorations, delicate in scale and elegant in craftsmanship, a new sort of eclecticism made its appearance. Basically the house derives from those manor houses of the sixteenth century that were uninfluenced by Renaissance ideas; but in the detailing of Cloverley there were Japanese motifs, notably the sunflower disks that Nesfield called his 'pies', reflecting the new interest in oriental art that such painters as Whistler and Rossetti were taking. Except for its relatively early date, Cloverley Hall has no place in a discussion of High Victorian Gothic, for it is characteristically Late Victorian (see Chapter 15).

Nesfield's partner Shaw, however, built in the sixties two churches that were still High Victorian in style, one in Yorkshire, the other at Lyons in France. Holy Trinity at Bingley of 1866–7 is one of the finest examples of the 'Early French' phase of the Victorian Gothic (Plate 94A). Externally it builds up to a very tall central tower, superbly proportioned and very simply detailed, that more than rivals in quality Street's at Oxford. Internally the fine random-ashlar stonework – there is no polychromy – the very bold and structural detailing of the square archivolts and the simply carved capitals illustrate even better than does Webb's domestic work in brick the new and more sophisticated attitude towards the building crafts. The principles involved go back to Pugin; but now for the first time in Webb's and Nesfield's and Shaw's work of the sixties one senses a real respect, at once intelligent and intuitive, for the differing nature of different materials. Such a respect would continue to give special virtue to the work of the most distinguished English and American architects of the late nineteenth and early twentieth centuries (see Chapters 12, 13, 15, and 19).

The Lyons church, which Shaw began in 1868, is perhaps the finest of the many Victorian churches built on the Continent for local English colonies, but very different indeed from that at Bingley. A city church set between tall blocks of flats, this is also very tall in its proportions and has a more urban character than that of the Yorkshire church. French freestone does not lend itself to the particular type of semi-rustic craftsmanship that was now rising to favour with the younger English architects; hence the Lyons church is less significant than the Bingley one in that respect. But Shaw was not primarily a church architect, nor did he long remain a High Victorian (see Chapter 12).

More characteristic of the various new directions that the Victorian Gothic was taking in the mid sixties, directions that soon also led quite away from the High Victorian, are

two new churches both designed well before Shaw's at Bingley and Lyons were begun. At All Saints' in Jesus Lane, Cambridge, begun in 1863, the spikiness of the Italianizing Victorian Gothic and the rugged structuralism of the 'Early French' – rarely carried farther than in Bodley's own early work – gave way to something much more English in inspiration. There is, for example, a very deep chancel and only one aisle, not to speak of a battlemented tower at one side, out of which rises a small stone spire. In fact, Bodley returned here to the fourteenth-century Decorated models preferred by Pugin, some so 'late' as to suggest the still forbidden Perpendicular.

Bodley now made even more use of the decorative talents of Morris and his associates than at St Michael's, Brighton. His St Martin's-on-the-Cliff, Scarborough, completed in 1863, is a finer church than either St Michael's or All Saints'. Falling between them in style as well as in date, this has less historical importance, but it also was richly decorated by the Morris firm. At All Saints' painted polychromy, but of a rather subtle order much superior to most of that of the forties, entirely replaced permanent polychrome. The brocade patterns stencilled on the walls seem almost to be designs of Pugin strengthened in their outlines and their colours by Morris. Although Bodley's mature career as one of the two principal Late Victorian church architects did not really get under way until 1870, Victorian Gothic was evidently coming full circle at All Saints', and the High Victorian phase was nearly over.

The other important new church of this period, St Saviour's, Penn Street, in the Hoxton district of the East End of London, was begun in 1865 by James Brooks (1825–1901). Unfortunately this was very badly damaged in the blitz, and has since been demolished. St Saviour's was of brick and included some polychromy like Brooks's slightly earlier East End church, St Michael's in Mark Street, Shoreditch, of 1863–5. But what was really significant at St Saviour's was the unified interior space, ending like Clutton's Leamington church and Pearson's Vauxhall church in London in a rounded apse (Plate 89B). Notable also were the Webb-like quietness of the general composition and the straightforward handling of the main structural elements. In another, happily unblitzed, church by Brooks in the East End of London, St Chad's, Nichols Square, in Haggerston, which was begun in 1867, the same qualities can be seen in a more mature state. Moreover, the rather plain windows and the simple moulded brick trim are echoed at domestic scale on the nearby rectory.

The fine vessel of the interior of St Chad's, with its simple nave arcade of stone, clean red-brick walls, quietly structural wooden roof over the nave, and brick-vaulted chancel, contrasts strikingly with the hectic elaboration and dramatically vertical proportions of Butterfield's last London church of any great interest, St Augustine's, Queen's Gate, of 1865–71. Two churches of the late sixties outside London, All Saints' at Babbacombe near Torquay, which was built in 1868–74, and the earlier mentioned St Augustine's at Penarth, begun in 1866, are much more satisfactory examples of Butterfield's middle period.

Brooks continued through the seventies to develop the implications of his East End churches with great success. The largest and most notable is that of the Ascension, Lavender Hill, in Battersea, which was begun in 1873 and completed by J. T. Mickle-

thwaite [14] (1843–1906), a former assistant of G. G. Scott, in 1883. The vast lancet-pierced red-brick hull, so to call it, of this church is one of the landmarks of the South London skyline; the interior, which is perhaps a little bare, has nevertheless a monumentality of scale rare in English churches of any period. However, this monumentality is rivalled both inside and out in St Bartholomew's, Brighton, completed in 1875 by Edmund E. Scott (Plate 93B), and considerably later in Brooks's own London church of All Hallows, Shirlock Street, begun in 1889 and never provided with its intended vaults.

Victorian Gothic, whether Early or High, is primarily an ecclesiastical mode. The leading Neo-Gothic architects were happiest when building churches; their few secular works – if parsonages, colleges, and schools can really in this period be called secular – generally have a churchy tone. But it is characteristic of the High Victorian Gothic as opposed to the Early Victorian Gothic, and *a fortiori* to Neo-Gothic on the Continent, that it became for some twenty years, from the early fifties to the early seventies, a nearly universal mode.[15] A good many houses have already been cited; and certainly no churches of this period provide finer specimens of High Victorian Gothic than the warehouse at 104 Stokes Croft in Bristol, which was built by E. W. Godwin (1833–86), a friend of Burges, in the early sixties (Plate 113), or the office building of 1864–5 at 60 Mark Lane in London by George Aitchison (1825–1910). The one is an especially subtly polychromed attempt to follow Ruskin's Italianism, the other more 'Early French' in its detail, but both use round-arched arcading throughout their several storeys (see Chapter 14).

Godwin in two rather modest town halls, one at Northampton of 1861–4, which is very rich in sculptural detail, the other at Congleton, Cheshire, of 1864–7, which is more severe and 'Early French' in character, produced two further High Victorian Gothic [16] works of the highest quality (Plate 92A). Unfortunately by the time the taste of the authorities in the larger English cities caught up in the late sixties with the advanced position of the High Church architectural leaders, those leaders had left that position far behind. As a result, many of the biggest and most conspicuous public edifices are very retardataire. Gothic designs won only low premiums in the Government Offices competition in 1857, although both Street's and Deane & Woodward's – on which Ruskin advised – were of considerable distinction. When Alfred Waterhouse (1830–1905) two years later won the competition for the Manchester Assize Courts he elaborated the design of this large public structure along the rather unimaginative lines of Deane & Woodward's earlier Oxford Museum, then just reaching completion.

At best Waterhouse had a rather heavy hand and an uncertain sort of eclectic taste somewhat like G. G. Scott's. He lacked the cranky boldness of a Butterfield, the sophistication of a Street, and the sense of craftsmanship of such men as Webb and Godwin who were his own contemporaries. But he did have real capacity as a planner of large and complex buildings, something at which most of the leading church architects had little or no experience. Thus his Manchester Town Hall, begun ten years later than the Assize Courts in 1869, while lacking all the refinement of Godwin's smaller and earlier ones, is a large-scale exercise in High Victorian Gothic of some interest. But inevitably the High Victorian Gothic was a mode less well suited to this kind of monumental

exploitation than the contemporary Second Empire mode as naturalized in England and America. For all the skill of Waterhouse in the organization of plan and general composition and in the bold detailing of materials inside and out, the Manchester Town Hall is a late and inferior work – late, that is, in the phase of style which it represents, though not so late in the highly successful career of its architect. It may properly be compared, and to its own manifest advantage, moreover, with Schmidt's Rathaus in Vienna.

The other most conspicuous High Victorian Gothic public monument, the Law Courts in London, is the work of Street, an older and far more distinguished architect; but it came very late indeed in Street's career, so late that he died before it was finished in 1882. Designed originally for a competition held in 1866, many years dragged by during which the site was twice changed – once southward to the river's edge and then back to the north of the Strand – before it was even begun in 1874. Other work of the late sixties and early seventies by Street indicates how completely his own taste had turned away from this sort of French thirteenth-century Gothic even before the Law Courts were started.

At St Margaret's in Liverpool, for example, which he designed in 1867, Street reverted to English fourteenth-century models; thus, like Bodley at All Saints', Cambridge, he seemed to be returning to the particular stylistic ideal with which the ecclesiologists had started out twenty-five years before. In the Guards' Chapel at the Wellington Barracks in London, however, which was all but completely destroyed in the blitz, he in 1877 remodelled the interior of an engineer-built Grecian edifice with incredible sumptuousness in a sort of Byzantinoid Italian Romanesque, using a stone-and-brick banded barrel vault and a glittering investiture of gold and glass mosaic that quite outshone the comparable work of Continental architects in the *Rundbogenstil*. Then, in remodelling the interior of St Luke's, West Norwood, near London, built by Francis Bedford (1784–1858) in 1823–5, equally Grecian, he used in 1878–9 round-arched Italian detail. Despite the bold banding in brick and stone, this is certainly not Gothic or Byzantine, but rather recalls the Tuscan Proto-Renaissance, or even the *quattrocento*.

Certain buildings by Deane & Woodward and by Scott at Oxford and Cambridge have already been mentioned; much more exists by Scott, Waterhouse, and various others, very little of it of any distinction, yet sometimes fitting not too uncomfortably into the general scene. The most striking example of Victorian Gothic architecture at Oxford, fortunately on an isolated site opposite the Parks, where it had no neighbours earlier than the Museum, is Butterfield's Keble College, a complete entity in itself, largely built in 1868–70. With its walls so violently striated with bricks of various colours, Keble would have been a most disturbing increment to any existing college; on the other hand, Butterfield's quietly stone-banded chapel at Balliol of 1857 is that college's happiest feature, the rest being largely the work of Waterhouse.

Since Keble was founded by Butterfield's pious High Church friends for clerical students, the chapel, which was added to the group in 1873–6, understandably dominates the whole. Tall and richly decorated, this has many of Butterfield's virtues, but it quite lacks the directness and the poignance of his best work of the fifties and early sixties.

The hall and library are less monumental than the chapel, fitting more easily into the ranges of sets that surround the two quadrangles. The over-all composition is fairly regular, and there is less coarse or fussy detailing than Scott and Waterhouse used for their 'Collegiate Gothic'. Moreover, the scale of Keble is modestly domestic and, despite its considerable size, the features are simple and crisp; but in the relatively clean air of Oxford Butterfield's polychromy has received less of the desirable mellowing than it gets in London. The banded walls certainly lack the harmony that the softer colours of the materials used in his country church interiors generally produced.

By the time Keble was completed – indeed in advanced circles well before it was begun – such polychromatic brashness was out of date. Yet at Rugby School, where Butterfield's buildings of 1868–72 awkwardly adjoin various earlier nineteenth-century Gothic structures, the polychromy is even louder; moreover, it is still less mellowed by time. Although Butterfield lived on through the rest of the century and continued to build many churches and some schools, this first and boldest of High Victorian Gothic architects was more and more left behind after the mid sixties by the evolving taste of his own High Church milieu.

There are other High Victorian Gothic collegiate groups which are, or would have been if carried to completion, far finer than Keble. Being at less renowned institutions than Oxford, they are less well known. University College on the sea-front at Aberystwyth in Wales is by J. P. Seddon (1827–1906), from 1852 to 1862 a partner of John Prichard. This structure was begun in 1864 to serve as a hotel, incorporating as its most inappropriate nucleus a small Castellated villa built by Nash for Uvedale Price in the 1780s. The failure of the hotel project, the slow and faltering start of the college, and the necessary repair and rebuilding after two fires have left a complex pile of most disparate character, even though it is almost all by Seddon. But certain aspects of the building, the bowed section on the sea-front – originally the hotel bar, later the college chapel! – and the entrance and stair tower on the rear are among the grandest and most boldly plastic fragments produced in this period (Plate 91A). Neither Oxford nor Cambridge has anything of comparable quality.

For Trinity College in Hartford, Conn., Burges prepared in 1873 a splendid plan worthy of its fine new site on a high ridge south of the city (Plate 88). Unfortunately only one side of one quadrangle was finished according to his designs; but that is perhaps the most satisfactory of all his works, and the best example anywhere of Victorian Gothic collegiate architecture. The brownstone from nearby Portland, Conn., favourite material all over the eastern states during what Lewis Mumford has called the 'Brown Decades', is especially well suited to Burges's heavy and well-articulated detail. The rough quarry-facing of the random ashlar contrasts tonally with the more smoothly cut trim in a fashion that is polytonal if not polychromatic. The roughness of the stone walls also enhances the massive proportions of the long dormitory range and of the paired towers with their boldly pyramidal roofs. Yet for the classrooms this masonry is articulated into banks of large mullioned windows. Despite the general regularity and even symmetry of the composition, there is plenty of functionally logical variety in the handling of the different sections. Burges was happy in the Scottish-born Hartford

architect who supervised the work, G. W. Keller (1842–1935); and Keller revealed his continued debt to Burges in the construction of a Memorial Arch in the park in Hartford which is one of the very few examples of such a Classical monument completely translated into Gothic terms, and not without real interest.

Burges undoubtedly enjoyed more what he did for the Marquess of Bute, beginning in 1865, in restoring Cardiff Castle and Castell Coch in Wales. 'Restoring' should be put in quotation marks, for by the time Burges got through with them both were almost as much fake castles as any built in the first half of the century. They lie somewhere between Fonthill Abbey and Peckforton in intention and are considerably more sumptuous internally than either. Although Cardiff Castle, which had been subjected to drastic Georgian remodelling, was gradually re-castellated with considerable consistency, the work there never reached completion. It is chiefly the incredibly rich interiors that are of interest, even if the interest is of a rather theatrical order.

Castell Coch near Llandaff, restored in 1875, has interiors of equal fantasy, almost comparable to those of Neuschwanstein; that is, they are more like settings for Wagnerian opera than anything the Middle Ages actually created. But the quality of the imagination and of the execution is of a very much higher order than Ludwig II commanded. Externally Castell Coch is a sober and plausible restoration-reconstruction of a smallish castle, chiefly of archaeological interest, but most romantically sited and solidly built. Beside its integrity the more famous restorations by Viollet-le-Duc at Pierrefonds and Carcassonne appear rather harsh, and obviously modern.

The McConochie house, built in Cardiff for Lord Bute's estate agent, is one of the best medium-sized stone dwellings of the High Victorian Gothic, superior in almost every way to Burges's own house at 9 Melbury Road in London. That was built later, in 1875–80, by which time the operatic medievalism of the interiors was quite out of date (see Chapter 12). Here in the Cardiff house the tight asymmetrical composition, the excellent detailing of the handsome stonework, and a generally domestic rather than Castellated air prepared the way for Burges's fine collegiate work in America.

English architects in the sixties were capable of exploiting a wide range of different aspects of the High Victorian Gothic in almost precisely the same years. Only the size and departmentalized organization of G. G. Scott's office, the largest of the period and more like the 'plan-factories' of the twentieth century (see Chapter 24), can explain how he could be nominally responsible for such a quiet, well-scaled, and advanced church as St Andrew's, Derby, designed in 1866 – some say by Micklethwaite, who was working for him at the time – and also for such a strident, complex, and over-elaborated edifice as the Midland Hotel fronting St Pancras Station. The design for this was prepared in 1865 for a competition held, curiously enough, two years after the shed had been begun by the engineers W. H. Barlow (1812–1902) and R. M. Ordish (1824–86). Such a drastic divorce of engineering and architecture could hardly be expected to produce a co-ordinated edifice, yet both aspects of St Pancras have considerable independent interest. The shed, ingeniously tied below the level of the tracks and rising, for purely coincidental technical reasons, to a flattened point of slightly 'Gothic' outline, has the widest span of any in the British Isles and, until the nineties, in the world. It is, therefore,

a nineteenth-century spatial achievement of quantitative, if not so much of qualitative, significance. The masonry block at the front is one of the largest High Victorian Gothic structures in the world. It long had ardent admirers, and it has come to have them again, for it epitomizes almost as notably as the Albert Memorial the aspirations of Scott and his generation. The contrast to its neighbour, Lewis Cubitt's Kings Cross Station, begun some fifteen years earlier, or even to Paddington, where the engineer Brunel and the architect Wyatt collaborated so happily, is striking. The taste of English railway authorities, as of most patrons of architecture, had been revolutionized by the general triumph of the High Victorian Gothic in the late fifties and early sixties. Yet on its completion in the mid seventies St Pancras was even more out of fashion in advanced circles than were Street's Law Courts, the construction of which only began at that time, so rapidly did taste continue to change in the late sixties and early seventies.

By 1870 church architecture, for example, was in general much chastened. Externally Teulon's St Stephen's, The Green, on Rosslyn Hill in Hampstead of 1869–76 is not polychromatic but all of purple-brown brick with some creamy stone trim. It builds up, moreover, somewhat like Shaw's Bingley church begun a few years earlier, to a tall rectangular crossing tower with rather quiet, more or less 'Early French', membering. Inside Teulon achieved in the brickwork a kind of golden harmony of tone resembling that of White's interior in St Saviour's, Aberdeen Park, completely eschewing the bold and almost savage patterns of contrastingly coloured bricks he had favoured since the early fifties. In the tremendously tall interior of Edmund Scott's already mentioned St Bartholomew's, Brighton – aisleless, chancel-less, and provided with broad, flat internal buttresses – the traces of brick polychromy are hardly noticeable on the walls of a space so grandly proportioned (Plate 93B). The later ciborium here is not by Scott.

Burges in the two Yorkshire churches which he began in 1871 at Skelton and at Studley Royal, both near Ripon, the latter with a very fine rectory near by, still aimed at a rather satiating luxury of both coloured and sculptural decoration in the interiors. But Pearson at St Augustine's, Kilburn Park Road, in London, initiated at this time a new line of vast plain churches (Plate 93A). That line would culminate in the archaeological correctness of his Truro Cathedral in Cornwall, started in 1880 and finally completed by his son (F. L., 1864–1947) in the present century. His last work, the cathedral of Brisbane, Australia, designed shortly before his death in 1897, was only begun by his son in 1901 (Plate 97B).

As Pearson's Kilburn church was built in 1870–80, it should perhaps more properly be considered Late Victorian than High. But Pearson retained here and to the end of his life, particularly in his tall towers and spires, a truly High Victorian love of grand and bold effects. However archaeological he became, and with his passion for rib-vaulting he could from this time on be rather more archaeological in a Franco-English way than Viollet-le-Duc in France or Cuijpers in Holland, his spaces are usually nobly proportioned and his masses crisply composed no matter how 'correctly' they are membered. At Truro, where the cathedral rises suddenly out of narrow streets, its granite still almost unweathered, Pearson's handling of the relationship of the three tall towers carries vigorous plastic conviction; Burges had attempted the same effect at Cork with

rather less success when the High Victorian was still at its highest. Brisbane Cathedral is plainer and tougher than Truro, despite its very late date (Plate 97B).

It would be inappropriate in this chapter to carry the story of Victorian Gothic much further. Scott and Street died in 1878 and 1881 respectively, though Butterfield and Bodley outlived Pearson. Butterfield seems to have frozen for life in the mode of his early maturity, and as a result produced ever feebler work after the mid sixties; Pearson was able to maintain a leading position with a younger generation grown chaster and more archaeological in its standards without forsaking his pursuit of those more abstractly architectonic values which give distinction to his earlier work. It was above all Bodley, however, with his Late Decorated verging on Perpendicular, who set the pace in Anglican church-architecture from this time forward. His personal style, still tentative at All Saints, Cambridge, in the mid sixties, was mature by the time he built St Augustine's at Pendlebury in Lancashire in 1870–4. Crisp and almost mechanical in its detailing, this tall rectangular mass, buttressed by an internal arcade, is impressive both inside and out (Plate 92B), yet it wholly abjures most of the qualities that had for two decades given special vitality to English Neo-Gothic.

With various modulations what might, rather ambiguously, be called 'Bodleian Gothic' remained the favourite of Anglicans in and out of England well into the twentieth century. The continuing admiration for the work of Sir Ninian Comper (b. 1864) in certain milieus suggests that it has not even yet been finally superseded; but much of Comper's large-scale work dates from before Bodley's death in 1907. For example, his principal London church, St Cyprian's in Glentworth Street, was built in 1903. This crisp and clean example of revived Late Gothic, with its elegant gilt font-cover and screen, may wind up this account more appropriately than the vast unfinished cathedral at Liverpool begun by Sir Giles Gilbert Scott (b. 1880), a grandson of the first G. G. Scott, in 1903. But neither is Victorian Gothic; both are rather manifestations of one aspect of twentieth-century 'traditionalism' (see Chapter 24).

CHAPTER 11

LATER NEO-GOTHIC OUTSIDE ENGLAND

THE High Victorian Gothic produced in the United States no such roster of distinguished – or at least prominent and highly characteristic – monuments as in Britain. The period of its florescence was much briefer, and few assured and sophisticated talents came to the fore. If, in the case of Richardson, one such did appear, his maturity came only in the mid seventies, when the High Victorian Gothic was all but over. Why the period was so much shorter in the United States, in effect only the decade 1865–75, is not altogether clear. One reason, undoubtedly, is that the speed of transmission of new architectural ideas from England to America had increased so much by the seventies that the influence of the later English mode which succeeded the High Victorian Gothic around 1870 reached America very promptly indeed (see Chapters 13 and 15). Another quite different reason is that a wave of nationalism in America, parallel to those current in North European countries at the time, encouraged from the mid seventies developments that were more autochthonous. Leadership in commercial and in domestic architecture crossed the Atlantic almost precisely at the moment when, in 1876, the centenary [1] of American political independence was being celebrated.

The phenomenal success in the United States of Ruskin's treatises, *The Seven Lamps of Architecture* of 1849 and *The Stones of Venice* [2] of 1851–3, should be emphasized; from 1855 Street's *Brick and Marble Architecture* was also available. Yet, despite the warm reception of such relevant writings, few reflections of the High Victorian Gothic can be discerned in American production before 1860. The first is probably the Nott Memorial Library [3] at Union College, Schenectady, N.Y., designed by Edward T. Potter (1831–1904) in 1856 and built in 1858–76. Here the banded arches are pointed and the plan is circular, perhaps in emulation of the Pisa Baptistery to which Ruskin had called attention, but more probably in deference to Ramée's general plan for the college (see Chapter 1).

The years immediately following the Panic of 1857 and, quite understandably, the Civil War years 1861–5 were relatively unproductive of new buildings, as has already been noted. An edifice far more overtly Ruskinian than Potter's Library was the National Academy in New York, built by Peter B. Wight (1838–1925) in 1863–5, although apparently first designed as early as 1861. Its Venetian Gothic mode, with pointed arches boldly banded and walls diapered in coloured stones, was still the subject of considerable contemporary controversy as it would hardly have been in England by this date.

Potter and Wight were both young men. Established Gothic Revivalists in America did not swing over as rapidly as in England from the Early Victorian to the High. Upjohn, Potter's master, was no Butterfield; Renwick when designing St Patrick's Cathedral in New York in 1859 followed contemporary Continental rather than English models, presumably because his clients were Catholics.

At best the sort of High Church Anglican patronage which sponsored Butterfield's and Street's innovations in England was relatively much less important in the United States – or Canada and Australia, for that matter. However, what is probably the earliest example of American church architecture to reflect, in a mildly Streetian vein, the new mode of the fifties in England is St John's Chapel at the Episcopal Theological Seminary in Brattle Street in Cambridge, Mass. This was built in 1859 by William Robert Ware. Yet when Ware founded in 1865 the first American architectural school at the Massachusetts Institute of Technology in Boston, he based its instruction on that of the Paris École des Beaux-Arts.[4] His own partner Henry Van Brunt (1832–1903), moreover, was one of the first to follow Richardson's lead away from the High Victorian Gothic in the seventies. So little were either of them dyed-in-the-wool Gothicists.[5]

However, Ware & Van Brunt designed and built in Cambridge, Mass., one of the largest and most conspicuous of mature High Victorian Gothic edifices in America, Memorial Hall [6] at Harvard College, first projected in the late sixties and erected in 1870–8. This somewhat cathedral-like edifice has walls of red brick liberally lashed with black and a massive central tower now denuded by fire of its high roof (Plate 95A). The manner is more than a little Butterfieldian, but the quality is not even up to G. G. Scott.

Before Memorial Hall was designed, a competition held in 1865 for the First Church (Unitarian) in Boston in the new Back Bay residential district had brought out a variety of rather feeble attempts by Boston architects to follow the High Victorian Gothic line. The winning design of Ware & Van Brunt, executed in 1865–7, while not of the wilder Low Church order of Teulon's or Keeling's London work of these years, is hardly comparable to Street's or Butterfield's, much less to the contemporary production of younger architects such as Brooks, Bodley, or Shaw. Its best feature is the material, the richly mottled and textured local Puddingstone from nearby Roxbury.

The High Victorian Gothic of the sixties and early seventies in the United States was no more restricted to the ecclesiastical field than in England. Despite its churchy look, Memorial Hall served a variety of secular purposes from refectory to concert hall; only the wide transeptal lobby was strictly memorial in purpose. But there was rarely such single-minded devotion to the Gothic in the United States as one finds with many English architects of the period. For example, the untutored Elbridge Boyden (1810–98), best known for introducing the cast-iron commercial front into New England in 1854, could build two buildings for the Polytechnic Institute of Worcester, Mass., in the same year 1866 of which one, the Washburn Machine Shop, is mansarded with crude, vaguely Second Empire, detailing; while the other, Boynton Hall, is in a very provincial sort of High Victorian Gothic. Hunt, product of a Parisian education, designed the Yale Divinity School in New Haven in 1869 in a frenzied, rather Teulonian, Gothic; while in his precisely contemporary Lenox Library in New York, built in 1869–77, he followed closely and with some dignity French, if not specifically Second Empire, models.

It is not really surprising, therefore, that Richardson, returning from Paris and the École des Beaux-Arts at the end of the Civil War and entering a competition for a new

Unitarian church to be built at Springfield, Mass., offered a High Victorian Gothic project that seems to derive rather directly from the work of Keeling and other Low Church English practitioners. What *is* surprising, however, considering the lack of special interest to later eyes in his Unity Church as executed in 1866–8, is the fact that he won the competition! The warm colour and texture of the rock-faced brownstone from nearby Longmeadow laid up in random ashlar, a certain masculine scale in the details, and an attempt at least at a boldly asymmetrical composition evidently struck his contemporaries as very promising, however.

It is not in the Unity Church, but in Richardson's second church, Grace Episcopal, in Medford, Mass., built in 1867–8, that posterity recognizes strong personal expression. Here the more massively pyramidal character of the asymmetrical composition and, above all, the great boulders of which the walls are built, with heavy trim of rough quarry-faced granite, bespeak an original approach (Plate 91B). Yet this approach was evidently still nurtured on the English High Victorian Gothic models that Richardson knew through the wood engravings in imported periodicals. It is even specific enough here so that one can describe this Medford church as Burgessy rather than Butterfieldian or Street-like; it is certainly no longer Keelingesque like the church in Springfield. Incidentally, when Richardson visited England in 1882 it was the work of Burges, who had just died, that he went out of his way to see – by that time, however, he found it rather disappointing.

If Richardson's first churches were Gothic, his Western Railway Office at Springfield, built in 1867 for a client associated with the Unity Church commission, was generically Second Empire. Yet this was still more directly derived from current English work that was closely related to that mode, notably the Francis Brothers' National Discount Building of 1857 in the City of London, than from anything Parisian. His brick and stone Dorsheimer [7] house of 1868 in Delaware Avenue in Buffalo, N.Y., is also Second Empire rather than Victorian Gothic, but very restrainedly so, and hence rather more French in effect. Other work by Richardson dating from the late sixties, such as the B. H. Crowninshield house in Marlborough Street in Boston of 1868–9, was more experimental in design, often recalling wild English work of the early years of the decade. Although built of wood and of very modest size, Richardson's most interesting house of this period was the one that he built for himself in 1868 at Arrochar on Staten Island near New York.[8] This combines the use of a high mansarded pavilion with a sort of imitation half-timbering related to the contemporary American 'Stick Style' (see Chapter 14).

In Farnam Hall at Yale College in New Haven (Plate 96A), begun in 1869, the German-trained Russell Sturgis (1836–1909),[9] who had been for a time Wight's partner, somehow arrived at an almost Webb-like – or at least Brooks-like – simplicity and sophistication of late High Victorian Gothic design, in marked contrast to the stridency of Hunt's precisely contemporary Divinity School there. This, however, is almost unique. The most characteristic work of the day was produced by such home-trained architects as Ware & Van Brunt, Wight, Edward T. Potter, and his younger brother William A. Potter (1842–1909).[10] Wight's National Academy in New York has been

mentioned. His Mercantile Library in Brooklyn, N.Y., completed in 1869, of red brick with ranges of pointed-arched windows regularly but asymmetrically disposed, is similar – and not inferior – to much of G. G. Scott's secular work. Edward T. Potter's Union College Library has also been mentioned. His Harvard Church in Brookline, Mass., of 1873–5 is more conventional for its period. Largely renewed internally after being gutted by a fire in 1931, this shows how effectively such American materials as the popular brownstone from Portland, Conn., and the light-coloured Berea sandstone from Ohio, enlivened by accents of livid green serpentine from Pennsylvania, could produce a polychromy richer and more enduring than the endemic Butterfieldian or Teulonian red brick, with banding of bricks dipped in black tar, that had been in general use for a decade. Along this line Richardson himself followed for a while (see Chapter 13). At the same time William A. Potter, who became very briefly Supervising Architect in Washington in succession to Mullet in 1875, produced a few post offices, such as the one in Pittsfield, Mass., that are characteristic but not very distinguished examples of secular High Victorian Gothic executed in stone. (Both Potters, however, gave up the High Victorian Gothic to accept Richardson's leadership within the next few years.)

The Boston & Albany Railroad station in Worcester built by Ware & Van Brunt in 1875–7, with its tall and striking tower and its vast segmental-pointed arches at the ends of the shed, provides one of the happiest illustrations of what the rather illiterate approach of even the most highly trained Eastern architects of this period could produce. By working in an almost primitive way, along lines suggested by the half-understood work of the bolder English innovators, something was often achieved of which few Continental architects were capable in this period. In less sophisticated hands, whether of provincial architects or of builders, the results were naturally still cruder, though sometimes equally vital and fresh. In church design,[11] where ecclesiological control of planning was not accepted outside the Episcopalian denomination, galleried auditorium schemes with rows of exposed iron columns were often executed with a violence of polychromy and a gawkiness of notched detailing that exceeded Teulon or Keeling at their most extreme. One of the most prominent extant examples is the squarish New Old South Church at Copley Square in the Back Bay district of Boston, built in 1874–5 by Charles A. Cummings (1833–1905) and his partner Sears in 1875–7. Its impressive tower resembling an Italian campanile has now been much reduced in height and chastened in silhouette.

Even more extreme than most churches, but of the highest quality, is the intensely personal work of Frank Furness (1839–1912) [12] in Philadelphia. His building for the Pennsylvania Academy of Fine Arts in Broad Street was erected in 1872–6 in preparation for the Centennial Exhibition. The exterior of this has a largeness of scale and a vigour in the detailing that would be notable anywhere, and the galleries are top-lit with exceptional efficiency. Still more original and impressive are his banks, even though they lie quite off the main line of development of commercial architecture in this period (see Chapter 14). The most extraordinary of these, and Furness's masterpiece, is the Provident Institution in Walnut Street, which was built as late as 1879 (Plate 95B). The tower over the front of this has unfortunately lost its pyramidal roof, but the

gigantic and forceful scale of the granite membering remains unequalled in Neo-Gothic work anywhere. The interior,[13] entirely lined with patterned tiles, is of rather later character than the façade and now much cluttered with modern intrusions, but it was equally fine in its own way originally. Later work by Furness is of less interest, and his big Broad Street Station of 1892–4 has been demolished. No small part of Furness's historical significance lies in the fact that the young Louis Sullivan picked this office – then known as Furness & Hewitt – to work in for a short period after he left Ware's school in Boston. As Sullivan's *Autobiography of an Idea* testifies, the vitality and originality of Furness meant more to him than what he was taught at the Massachusetts Institute of Technology, or later at the École des Beaux-Arts in Paris (see Chapter 14).

In the realm of house-design the more-or-less Gothic-based 'Stick Style' represented a largely autochthonous American development not without considerable significance and interest (see Chapter 15). In public architecture there was little serious achievement even at the hands of English-trained architects such as Calvert Vaux (1824–95) and his partner F. C. Withers (1828–1901) [14] or second-generation Gothicists like Upjohn's son (Richard M., 1828–1903). The younger Upjohn's Connecticut State Capitol [15] in Hartford begun in 1873, the only major American example of a High Victorian Gothic public monument of any great pretension or luxury of materials, is singularly vulgar and stylistically ambiguous, with its completely symmetrical massing and its tall central dome, compared to Burges's contemporary project for Trinity College there.[16] Doubtless G. G. Scott would not have disdained it, even so!

Still more comparable to Scott's own thwarted ambitions for a High Victorian Gothic governmental architecture, which led him as late as the seventies to enter various Continental competitions, is an earlier group of buildings in the New World outside the United States, the Parliament House (Plate 97A) and associated structures at Ottawa, Canada, designed by Fuller & Jones and Stent & Laver in 1859 and built in 1861–7. F. W. Stent had come out from England some considerable time before this, having last exhibited at the Royal Academy in London in 1846. Thomas Fuller (1822–98), also English, had settled in Toronto in 1856. Of their respective partners, Augustus Laver (1839–98) and Chilion Jones, rather less is known. In the course of the work Fuller and Laver joined forces, moving on shortly to the United States, as has been noted.

The main block at Ottawa, which was by the first-named firm, has been rebuilt after a fire in the present century in a considerably chastened vein, except for the big chapter-house-like library at the rear, which is original. But the variety of form, the gusto of the detail, and the urbanistic scale of this project made of the Dominion Capitol a major monumental group unrivalled for extent and complexity of organization in England.[17] The buildings flanking the vast lawn extending in front of the Parliament House are by Stent & Laver. These are somewhat less exuberant in scale and more provincial in the character of their detailing than the Parliament House was originally.

Most of the Neo-Gothic in Canada up to this time is more properly to be considered Early rather than High Victorian (see Chapter 6). An exception to this, perhaps, is University College in Toronto, designed in 1856 by F. W. Cumberland (1821–81), who had come out from England in 1847. Yet its rich and rather bombastic Norman design

is closer to English work of the earlier decades of the century than to the round-arched Ruskinian Gothic of the fifties.

Australia, the other major British Dominion, had nothing comparable to Canada to offer in this period. Wardell's English, Scottish, and Australian Bank in Melbourne is a passable example of secular High Victorian Gothic but no more than that. St John Evangelist's, which he built at Toorak south of Melbourne in 1860–73, is handsomer but very simple – still almost Puginian, indeed – and all of monochrome ashlar. The enormous Catholic cathedral of Melbourne, St Patrick's, which Wardell began in 1860, is more Continental in character, with two west towers like Renwick's St Patrick's in New York and also a tall crossing tower completed only in 1939. The Catholic cathedral of Adelaide, St Francis Xavier's, begun in 1870 and still without its intended western spires, reputedly goes back to a design prepared by Pugin before his death in 1852. But even the later design of his son E. W. Pugin, on which the executed work was actually based, must have been much modified over the years by W. H. Bagot, H. H. Jory, and L. Laybourne-Smith, who successively supervised the job. It is certainly no happier an example of High Victorian Gothic than Wardell's Catholic cathedral of Melbourne.

The Anglican cathedral in Melbourne, St Paul's, having been begun in 1850 from designs by Butterfield, ought to be finer. But Butterfield had made the drawings as early as 1847, before even he was a High Victorian, and the laggard execution of the church by Joseph Reed evidently entailed much modification of the original designs. Moreover, the spires by John Barr date only from 1934. For the very late Anglican cathedral (Plate 97B) at Brisbane, St John's, the finest of the lot, which was begun in 1901 by F. L. Pearson from earlier designs by his father J. L. Pearson as has already been mentioned, Butterfield had also prepared designs in 1884.

The architecture of the Dominions remained Colonial in spirit, as these notes on a few Australian churches indicate, well into the present century. First the able Frank Wills, moreover, the English-born architect of Montreal Cathedral, and then Fuller & Laver were drawn away from Canada to the United States, where opportunities were greater. Despite the great interest of the Government Buildings at Ottawa, it was in the United States rather than the British Dominions that the High Victorian Gothic proved a stimulus to such highly original achievement as Furness's in the seventies.

The High Victorian Gothic episode in American architecture balanced almost precisely the Second Empire episode. Both were disowned, even by many of their most successful protagonists, by the mid seventies. It was the Gothic, however, that prepared the way for the more original developments of the last quarter of the century; as has already been stated, those who had practised chiefly in the Second Empire mode continued to take their lead from Paris. Yet there are paradoxes in the situation which must not be ignored. Richardson, the most creative new force in the seventies and eighties, continually urged young aspirants to an architectural career to study at the École des Beaux-Arts as he had done. Charles F. McKim (1847–1909), Richardson's first really able assistant, was Paris-trained; partly because of that training, it was he who became in the mid eighties the leader of the reaction against the Richardsonian. Sullivan, the first

truly great modern architect not alone of America but of the whole western world, was also in part Paris-trained, even though he was always highly critical of the doctrine of the École and much stimulated by Furness. Finally, it was even more the later writings of the French Viollet-le-Duc than those of the English Ruskin that encouraged bold and imaginative thinking about architecture in America in the seventies and eighties when his *Entretiens* became available in translation and were first widely read.[18]

Were this a history of architectural thought rather than of architecture – that is of what was actually *built* in the nineteenth and twentieth centuries – Viollet-le-Duc would play a much larger part. But his production,[19] while not negligible, is curiously ambiguous. His many 'restorations' are no contribution to nineteenth-century architecture; rather they represent a serious diminution of authenticity in the great monuments of the past subjected to his ministrations. These include most notably Notre-Dame in Paris, the refurbishing of which he continued alone after the death of Lassus in 1857, and the Château de Pierrefonds, Oise, the rebuilding of which began the next year and continued down to his death in 1879; but the whole list is very long indeed, including Carcassonne, Vézelay, and Saint-Denis, to mention only some of the best known things.

Viollet-le-Duc's new parish church for the suburb of St-Denis, Saint-Denys-de-l'Estrée in the Boulevard Jules Guesde, built in 1864–7, has considerable interest, however. Unlike most English High Victorian Gothic churches, it is vaulted throughout; but the vaulting does not have that look of a student exercise which characterizes Lassus's at Saint-Jean-de-Belleville in Paris of the previous decade. The broad square bays of the nave are well lighted by groups of lancets in the clerestory, and there is a sturdy sort of articulation of the elements not unlike that in the early work of Burges (Plate 98). Externally the rather complex plan, with a large rectangular Lady Chapel projecting behind the altar, produces a gawky and confused composition; but the detailing is simple and virile as in the interior. A massive western tower rises over the entrance porch, culminating in a tall slated roof rather than a stone spire. But the plate tracery of the large west window over the porch and the lancets of the stage above are stony enough and have a quite Street-like scale and vigour of form. It is perhaps unfortunate that Viollet-le-Duc built so few new churches; certainly most other French Neo-Gothic work is very inferior to this, as such a large and prominent church as Saint-Epvre at Nancy, begun in 1863 by M.-P. Morey (1805–78), a pupil of Leclerc, well illustrates.

In secular work Viollet-le-Duc was too often content to follow the current Second Empire mode with a good deal of the eclecticism, but little of the plastic boldness, of the English and the Americans. Such more or less Gothic blocks of flats as those that he built in the late fifties and sixties in the Rue de Condorcet and at 15 Rue de Douai in Paris are somewhat more comparable to the secular High Victorian Gothic in England (Plate 101A). These are certainly praiseworthy for the urbanistic politeness with which they fit between more conventional Second Empire neighbours despite their distinctly 'Victorian' detail,[20] but there is little originality of conception. On paper Viollet-le-Duc later showed great boldness, however, in certain projects proposing the use of metal structural elements that he published with the second volume of the *Entretiens* (see Chapter 16).

In the late fifties and sixties the vigour of the 'Early French' detailing of certain English architects and a related logic of structural expression then called 'real' was often derived in part from a study of Viollet-le-Duc's *Dictionnaire*. But Shaw's book of *Continental Sketches* of 1858 and Nesfield's similar book of 1862 make evident how intense and how idiosyncratic was their own first-hand study of medieval work across the channel. Certainly the 'Early French' detail of the English leaders is generally of higher quality than even Viollet-le-Duc's best at Saint-Denys-de-l'Estrée.

If there was very little Gothic work done in the third quarter of the century in France comparable in quality or in interest to that of the Anglo-Saxon countries, yet there was a general movement there away from the somewhat mincing attitudes of the forties and early fifties. Just as the Medieval Revival in America, considered in a broad sense, came to its climax in the mature work of Richardson (see Chapter 13) – which is much more Romanesque than Gothic in so far as it leans at all on the past – in France the Romanesquoid work of Vaudremer represents the highest achievement of the period in a non-Renaissance mode (Plate 72A). The same may even be said up to a point of most of the other countries of Europe. Yet the Germanic *Rundbogenstil* of the third quarter of the century was, for all the size, prominence, and elaboration of such public monuments as Waesemann's Berlin City Hall or Hansen's Vienna Waffenmuseum and the real excellence of Herholdt's Danish work, already a sinking rather than a rising mode.

In Germany and Austria more Neo-Gothic edifices, both secular and ecclesiastical, were built after 1850 than before; several of them have already been mentioned. These are, however, rather examples of contemporary eclecticism than of a concerted movement. In addition to his school and his Rathaus, however, Schmidt built in Vienna some eight Gothic churches ranging in date from the Lazaristenkirche of 1860–2 to the Severinkirche of 1877–8. Most of them are brick-vaulted hall-churches – that is, of the characteristic medieval German plan and section, with aisles of the same height as the nave. However, the largest and most interesting, the Fünfhaus Parish Church of 1868–75, is centrally planned. This is an aisled octagon rising to a ribbed dome with hexagonal chapels grouped around the irregularly polygonal apse (Plate 99B). The spatial complexity of the interior is of real interest, and the walls are painted to suggest polychromatic brickwork of almost British brashness. Two front towers flanking the gabled entrance bay are set close against the dome to provide a very Baroque sort of composition – this is really, therefore, a sort of Sant' Agnese in Agone or Karlskirche carried out with a G. G. Scott vocabulary of Neo-Gothic elements.

In Hungary the eighties saw a curiously belated manifestation of secular Neo-Gothic. The Parliament House, begun in 1883 by Imre Steindl and completed in 1902, was undoubtedly inspired by Barry's in London begun nearly a half-century earlier, but in character it is (not surprisingly) more like Schmidt's Vienna Rathaus. Thus did outlying countries in the later decades of the century continue to take up modes long obsolescent in the major architectural centres.[21]

The Gothic of C. F. Arnold (1823–90) at Dresden, as seen in his secular Kreuzschule of 1864–5 or the two-towered Sophienkirche of the same years, is inferior to Schmidt's, both in command of the idiom and in architectonic organization, as indeed is most such

German work of these decades. The Johanniskirche in Dresden of 1874–8 by G. L. Möckel (1838–1915), however, has a rather fine tower set in the transeptal position so much favoured in Victorian England. This is bold in scale and carefully detailed in a literate twelfth-century – not to say 'Early French' – way much as Burges or Pearson might have designed it in England. More characteristic of German work of these decades is the Munich Rathaus, built in 1867–74 by G. J. von Hauberrisser (1841–1922) and extended by him in 1899–1909. Excessively spiky, this seems almost to have borrowed back from G. G. Scott the more Germanic features of his Broad Sanctuary terrace in London of fifteen years earlier. But the Neo-Gothic of the seventies and eighties in Germany is in general no more aggressive and gawky than the popular Meistersinger mode that revived so turgidly the forms of the Northern Renaissance (see Chapter 10).

Holland, which made almost no significant architectural contribution in the first half of the nineteenth century, now produced in P. J. H. Cuijpers (1827–1921) a sort of Dutch Viollet-le-Duc. In addition to undertaking important restorations, he built many vast new Gothic churches of brick which he exposed once more in reaction against the earlier nineteenth-century practice of stucco-coating. Cuijpers was learned and ambitious, and in such work he could be rather more original than Viollet-le-Duc in France, if less so perhaps than Schmidt in Austria. His Vondelkerk, a church of 1870 near the Vondel Park in Amsterdam, is not centrally planned like Schmidt's Fünfhaus church in Vienna, but he obtained a somewhat similar spatial effect by making the crossing octagonal. The brickwork of the piers and the vaults is very richly treated but in a fashion as much polytonal as polychromatic. The banding is in bricks of different sizes and textures rather than of different colours, and the result has something of the subtlety of the interior of White's Aberdeen Park church in London.

A larger and later Amsterdam church by Cuijpers, the Maria Magdalenakerk in the Zaanstraat of 1887, is considerably more impressive, both inside and out. Occupying one of those narrow triangular sites so often assigned to important urban churches in this period, the exterior builds up grandly to the rather severe crossing tower at the rear. Inside, Cuijpers made the most of the difficulties of the site also. The east end is conventionally Gothic in plan, and the choir here is brick-vaulted, as is the Vondelkerk throughout. But the taller nave, covered with a wooden roof of ogival section, is much more effective spatially because of the way it is widened by triangular elements at the front where the aisles are cut off owing to the narrowing of the site (Plate 101B). The later painted decorations in this church are harmonious in tone with the brickwork, and the whole has a breadth of attack comparable to some of the best English churches of the seventies, such as Pearson's in Kilburn or Edmund Scott's St Bartholomew's, Brighton, without resembling any of them very much.

Curiously enough for so dedicated a church-builder, Cuijpers's secular work is more conspicuous, and hence better known, than are his churches. The two largest and most prominent nineteenth-century buildings of Amsterdam are both by him. In these, the Rijksmuseum built in 1877–85 (Plate 101C) and the Central Station of 1881–9, he moved away from the emulation of thirteenth- or fourteenth-century ecclesiastical Gothic

towards a more elastic sixteenth-century sort of design, rather similar to the English mode of these decades known as 'Pont Street Dutch' (see Chapter 12).

The similarity to the Northern Renaissance mode of this period in Germany is nearly as great, as also to such somewhat later Scandinavian buildings as Clason's Northern Museum in Stockholm and Nyrop's Town Hall in Copenhagen (Plate 173A). But Cuijpers's touch is lighter than that of the Germans, and his precedent rather more Late Gothic than Mannerist, while his two chief works precede those that they most resemble in Sweden and Denmark by a decade or more. In both cases the frank incorporation of iron-and-glass elements is notable, a vast shed at the station and two almost equally vast covered courts in the museum. Above all, being the Gothic Revivalist he was, Cuijpers saw to it that the craftsmanship was excellent throughout; while his handling of scale, though ambiguous as in much work of these decades everywhere, is surprisingly successful. Both are very large buildings, placed in isolation where they can be seen from a distance and with carefully studied silhouettes varied by towers and other skyline features; yet the membering is delicate and almost domestic, quite as in the rather comparable English work of George (Plate 104B) or Collcutt (see Chapter 12).

In Italy projects of restoration led, as elsewhere, to the designing of certain fairly ambitious new façades in Gothic to complete medieval churches. The most conspicuous is that of the cathedral of Florence. After many abortive earlier moves, this was finally begun by Emilio de Fabris (1808–83) in 1866, when Florence became briefly the capital of Italy, and completed only in 1887. The earlier and less successful façade of Santa Croce in Florence had been carried out in 1857–63 by Niccoló Matas (1798–1872). It is characteristic of the international architectural scene in these decades that neither of these carefully archaeological compositions in polychrome Italian Gothic comes alive in the way that Italianate High Victorian Gothic often did in the hands of English architects, or even American ones, in the fifties and sixties.

Churches were built for Anglicans in most of the principal cities of Europe in the mid nineteenth century, usually by English architects and always in Victorian Gothic. Sometimes, as in the case of the Crimean Memorial Church by Street [22] at Istanbul and Shaw's English Church at Lyons, these were by the most distinguished English designers of the day, but more often they were by hacks who lived abroad and specialized in such work. Among the 'English churches' of this period that provided good samples of the High Victorian Gothic for foreigners – many were still to all intents and purposes Early Victorian – are two by Street [23] in Rome, one for the English community, the other not 'English' at all in fact but built for American Episcopalians. The former, All Saints', in the Via del Babuino, with a much later tower not by Street, provides internally a moderately successful example of his later work, although it is unimpressive and largely invisible externally. It was begun in 1880, a year before Street's death, and opened in 1885.

Far finer is St Paul's, the American church, prominently located among the contemporary banks and blocks of flats of the Via Nazionale and built in 1873–6. Boldly banded in brick and stone and with a tall square campanile at the front corner, this is indeed a richer and more striking example of an Italian Gothic basilica than the Middle Ages ever

produced in Rome (Plate 100). The interior, with a rich apse mosaic by Burne-Jones on a glittering gold ground, has an originality and a coherence that is quite lacking in such Italian churches as were redecorated in the later nineteenth century. Late though this is in Street's *œuvre*, it remains one of his best works.

If the English High Victorian Gothic was to some extent an article of export – and, of course, this account has hardly touched on the vast outlying areas of the British Empire, notably including India, to which it was exported in the greatest quantity – it was nevertheless largely without real influence outside the United States and the British Dominions. In the world picture, it was the British architectural critics of this period, Ruskin and Morris, who would have a vital influence, but that influence came for the most part rather later, around 1890 (see Chapter 16). Cuijpers, however, was a reader of Ruskin from the fifties.

Still to be discussed is the early work of one great architect, also reputedly a reader of Ruskin, whose career began in the seventies with a sharp revulsion from the Second Empire mode towards the Neo-Gothic. The Spanish (or more precisely Catalan) architect Antoni Gaudí i Cornet (1852–1926) was one of the most intensely personal talents that either the nineteenth or the twentieth century has produced. His style hardly matured before the nineties, and what are generally considered his typical works must be discussed later in connexion with the Art Nouveau (see Chapter 16). But what he had accomplished already in the seventies and eighties can be better appreciated here in relation to the contemporary work of those decades in other countries.

Gaudí's earliest work was at the Parc de la Ciutadella in Barcelona, laid out in 1872, where he assisted the master of works Eduardo Fontseré, while still a student, in various projects for its embellishment. The elaborate Cascade there, incorporating an Aquarium, on which he worked in 1877–82 derives in the main from Espérandieu's at the Palais Longchamps in Marseilles. But some of the detail, both plastic and incised, has a flavour more comparable to that of the wildest and most eclectic English and American Second Empire work of the previous decade than to anything French.

The first commission for which Gaudí was wholly responsible is the house of Don Manuel Vicens at 24–26 Carrer de les Carolines in Barcelona. This was erected in 1878–80, immediately upon his graduation from the local Escuela Superior de Arquitectura, and in it no trace of Second Empire influence, French or international, remains. A large suburban villa built of rubble masonry liberally banded with polychrome tiles, the Casa Vicens passes beyond the extravagances of a Teulon or a Lamb in the sixties into a world of fantasy that only one or two High Victorian designers such as the Scottish Frederick T. Pilkington (1832–98) ever entered. Yet Gaudí's general inspiration came definitely from the medieval past. In Spain that past includes the semi-Islamic Mudèjar, however, and much of the detailing which appears most original to non-Spanish eyes is likely to be dependent on local precedent of one sort or another. For example, the floral tiles are merely what the Iberian world knows as *azulejos* and has continued to use down to the present time, especially in Portugal and Brazil (see Chapter 25).

In all the flamboyance of the decoration of the Casa Vicens, the most personal note is in the ironwork. This is naturalistic in theme and bold in scale; it also includes curious

linear elements that wave and bend in a way which is more than a little premonitory of the Art Nouveau of the nineties (see Chapter 16). The entrance grille is a masterpiece of decorative art of this period, rivalled only by some of Morris's contemporary stained glass.

The very utilitarian industrial warehouse for La Obrera Mataronense of 1878–82 at Mataró, with its great arched principals of laminated wood, should be mentioned to balance the Casa Vicens. Here Gaudí's prowess as an imaginative constructor – almost a straight engineer – was very evident, as also the fact that the unfamiliar forms he continually used – the shape of the arches here was parabolic not semicircular or pointed – were not a matter of personal crankiness but selected for statical reasons – Gothic in theory, that is, like some of Soufflot's vaulting, though not very Gothic in appearance.

In 1884, however, Gaudí was made director of works for a large new Gothic church in Barcelona, and from this time forward a considerable part of his activity, extending down through his restoration of the cathedral of Palma on the island of Mallorca in 1900–14, was that of a Gothic Revivalist, if an increasingly unconventional one. Towards such a career his own intense religiosity inclined him quite as much as was the case with Pugin and probably also with Cuijpers – Viollet-le-Duc, by exception, was strongly anti-clerical. Unlike Pugin's or Cuijpers's, however, Gaudí's career as an ecclesiastical architect was rather unproductive. Yet from the first he designed and executed church furnishings and, while still a student in 1875–7, he assisted the architect Francesc de Paula del Villar i Carmona (1845–1922) on a project for adding a porch to the monastery church of Montsarrat.

In 1881 Villar was made architect of the proposed Expiatory Temple of the Holy Family (Sagrada Familia),[24] for which a large square site had been obtained between the Carrers de Mallorca, de Marina, de Provença, and de Sardenya in an outlying part of Barcelona, and the construction of the crypt of a great cruciform Gothic church was started in 1882. Two years later Gaudí took over charge of the work, as has been said, completing the crypt by 1891 almost entirely according to Villar's original and quite conventionally thirteenth–fourteenth-century Gothic design. There followed the construction of the outer walls only of the chevet; these were finished by 1893. The further history of the church will be considered later; for Gaudí's style underwent extraordinary changes in the nineties as he designed and built one transept façade of the church and its towers – which is about all that exists above ground even today (see Chapter 17).

Contemporaneously with Gaudí's construction of the crypt and the chevet walls of the Sagrada Familia came four secular works, two of them also quite Neo-Gothic in character and two others of very great originality. The Bishop's Palace at Astorga of 1887–93 and the Fernández-Arbós house, known as the Casa de los Botines, in the Plaza de San Marcelo at León of 1892–4 might well be mistaken for provincial High Victorian Gothic done in England or America twenty or thiry years earlier. But the city mansion of Don Eusebio Güell at 3–5 Carrer Nou de la Rambla (now Conde del Asalto) in Barcelona, built in 1885–9, is an edifice of the greatest distinction, rivalled for quality in its period only by the very finest late work of Richardson in America (see Chapter 13). The Teresian College at 41 Carrer de Ganduxer in Barcelona is also quite remarkable in its simpler way.

Far suaver than his earlier Casa Vicens, the Palau Güell is quite as strikingly novel all the same. At the base yawn a pair of parabolic arches, their tops filled above a plain reticulated grille with sinuous seaweed-like ornament of the most extravagant virtuosity (Plate 96B). The 'Dragon Gate' of the Finca Güell of 1887 in the Avenida Pedralbes is still stranger, with a nightmare quality which those of the house in town happily lack. On either side of the entrance arches and in the projecting first storey the façade of the Palau Güell is no more than a rather plain rectangular grid of stone mullions and transoms. In scale this grid is more like Parris's Boston granite fronts of the twenties than like English window-walls, but it is detailed in a cranky medievalizing way that is more comparable to Webb's handling of stonework (Figure 17). The rear façade towards the court includes in the middle a broad bay-window with curved corners protected by a screen of ironwork as original but less fantastic than that at the entrance. The most extraordinary features of the exterior, however, are the chimney-pots rising in profusion above the flat roof like an exhibition of abstract sculpture and entirely covered with a mosaic of irregular fragments of coloured tile. Here the extravagance of his earlier houses is continued, and such terminal features remained characteristic of all his later secular work.

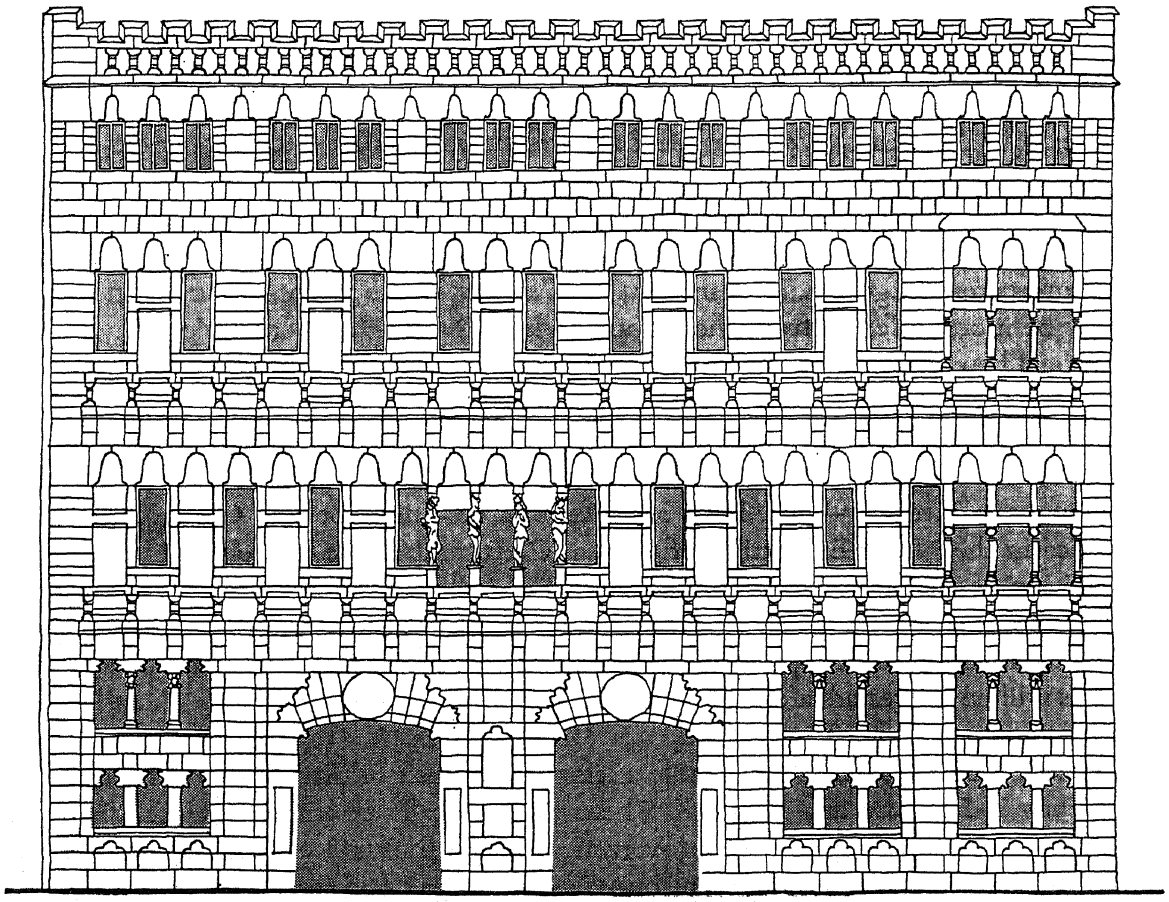


Figure 17. Antoni Gaudí: project for Palau Güell, Barcelona, 1885, elevation

The interiors of the Palau Güell are extremely sumptuous. There is much use of marble arcades of parabolic arches carried on round columns, both arches and columns being detailed with the greatest mathematical elegance and simplicity, yet with considerable variety. Some of the ceilings are of marble slabs carried by visible iron beams, but in the principal apartments there are incredibly elaborate confections of woodwork in the Moorish tradition.

The College of Santa Teresa de Jesús, built in 1889–94 immediately after the Palau Güell, is naturally much more modest than that great merchant's palace, which continues the line of those late medieval and Renaissance magnates often built. Rubble walls banded and stripped with brickwork are pierced alternately with ranges of narrow windows and with small square ventilators closed with quatrefoil grilles. The widely spaced windows are capped with steep parabolic 'arches' formed by cantilevering inward successive brick courses. The third storey is all of brickwork panelled with blind 'arches' between the windows and carried up into large, flat, triangular finials along the skyline. Less ingratiating than the Palau Güell with its luxurious use of fine materials inside and out, this college building is equally regular in composition and no more Gothic in appearance to a non-Spanish eye; in fact, however, it leans even more heavily on Mozarab and Mudéjar precedent than does the Casa Vicens. A certain amount of relatively plain wrought-iron grillework reflects that at the entrances of the earlier houses.

Only perhaps in England and America did the line of descent from the Gothic Revival lead so far away from the standard medievalism of the mid century in the seventies and eighties. But these early works of Gaudí represent only a part – to most critics the less important half – of his production. For strangeness they can be matched in work of equal consequence within this period only by Sullivan's earliest commercial façades in Chicago (see Chapter 14). Teulon and Harris had reformed by the seventies; Lamb and Pilkington were forgotten. In character Gaudí's work of the seventies and eighties could hardly be more different from the mature style of the English Shaw. Yet Shaw, at his occasional best, could compete with Gaudí in the quality of his achievement; while his influence, both at home and in the United States, was of very considerable historical importance, as Gaudí's was not, even in Spain (see Chapters 12, 13, and 15).

For all that Gaudí was actually represented at the Paris Exhibition of 1878 – by a glovemaker's vitrine! – and later by pavilions designed for the Compañía Transátlantica in the Naval Exhibition of 1887 at Cadiz and in the Barcelona International Exhibition of the following year, his work was hardly known at all except to his compatriots before the nineties. In the mid twentieth century, however, his reputation is still rising, as the flood of new publications of the last few years makes evident. The reasons for this will be suggested later, since they apply chiefly to the work that he did after 1900 (see Chapters 16 and 20).

In the European picture as a whole a less notable shift of direction occurred around 1870 than in England and America. There was naturally continuity in the Vienna of Francis Joseph, since the Imperial government called the tune in Austrian architecture and the King-Emperor's reign went on without a break – indeed, it lasted for another generation and more. What is surprising is that the end of the Second Empire and the

beginning of the Third Republic brought so little change in France. There was, of course, a short hiatus in production like that which followed the fall of the first Napoleon. As around 1820, however, so around 1875 the story picks up again almost as if there had been no break at all. Gradually interest in exposed metal construction, in decline since the fifties, revived; by the time of the Paris Exhibition of 1889 French feats of metal construction, not so much the Galerie des Machines as the Eiffel Tower, became the talk of the world (see Chapter 16).

In the fugue-like composition of nineteenth-century architectural history different themes have differing durations. The English theme of High Victorian Gothic, picked up in any case only by the Anglo-Saxon sections of the orchestra, came effectively to an end with the early seventies; the Second Empire theme, whether it be considered in a specialized sense or in a broader one, was picked up at least selectively by the whole western world and not least boldly by the Anglo-American section; moreover, it continued in most countries, with some modulation, for at least a decade longer than the High Victorian Gothic. Yet both in England and America, the important new themes of the seventies and eighties were rooted not in the Second Empire but in the Victorian Gothic, even though they represent something much more original than mere modulations of that earlier theme.

The third quarter of the nineteenth century is notable for the stylistic diversity of its production. In principle there may, perhaps, be no more difference between Visconti's and Lefuel's New Louvre and a Butterfield church than between Nash's Blaise Hamlet and his terraces around Regent's Park, to cite merely work by one early nineteenth-century architect. Yet thanks to the fugal character of the general historical development, which meant that new modes were added to the architectural repertory – as they had been at least since the twenties – more rapidly than old modes were dropped, the over-all picture became extremely complicated after 1850. It belies the most valid and idiosyncratic achievements of this period, however, to stress too much its apparently limitless eclecticism.[25] The account given in the last four chapters undoubtedly exaggerates the importance of certain modes, if that importance be measured statistically in terms of quantity of production. Qualitative considerations have led to a drastic selectivity, emphasizing relatively limited but vital aspects of architectural production at the expense of others that were far more ubiquitous but generally very dull. With different criteria of selection, using different standards of architectural quality – attainment of archaeological plausibility, say; or success or failure in the incorporation of new technical developments; or realization of programmatic aims – several very different pictures could be, and indeed frequently have been,[26] given of the architecture of the western world in these decades.

At the expense of emphasizing architectural developments peculiar to the Anglo-Saxon world in this same, possibly unbalanced, fashion the next chapter is organized around the career, after 1870, of Norman Shaw, whose early work in the High Victorian Gothic has already received some attention. The chapter following that centres on the achievement of the American architect Richardson, whose somewhat parallel beginnings have also been described in this chapter.

CHAPTER 12

NORMAN SHAW AND HIS CONTEMPORARIES

IN ENGLAND AND AMERICA there followed immediately upon the 'High Styles' of the fifties and sixties phases of stylistic development that cannot readily be matched in the other countries of the western world. This is true both of the quality of the achievement and also of its significance for what came after. Beginning just before 1870 in England and but little later in the United States, these two phases developed in far from identical ways. In both cases their conventional names, 'Queen Anne' and 'Romanesque Revival', are misnomers. It was a long time before the Queen Anne of the seventies and eighties became a revival of early eighteenth-century architecture in the sense of the Greek, the Gothic, or the Renaissance Revivals. The supposed Romanesque Revival in America of this period was never very archaeological. It is therefore less inaccurate to label these modes by the names of their principal protagonists: 'Shavian' for Richard Norman Shaw (even though that proper adjective refers more familiarly to George Bernard Shaw) and 'Richardsonian' for Henry Hobson Richardson. Shaw, however, shares responsibility for the effectiveness of the revolt against the High Victorian Gothic with other men, notably his early partner Nesfield, Webb, Godwin, and J. J. Stevenson.[1] Of all this group, Shaw was unquestionably the most successful, the most typical, and the most influential, though not the most original.

Except for Pugin, no architect since Robert Adam had so much effect on English – and for that matter also on American – production. Moreover, his influence lasted for some thirty-five years, rather longer than did Adam's. Yet it is not possible to define the Shavian mode clearly as it is the Adamesque or the Puginian. An architectural Picasso, Shaw had many divergent manners which he developed successively, but of which none – except the High Victorian Gothic – was ever entirely dropped. Each of these manners, down to the very end of his long practice, found in turn a following. His latest and most conspicuous work, the Piccadilly Hotel, built in London in 1905–8 between Piccadilly and the Regent Street Quadrant (Plate 107), is more characteristic of the Edwardian Age of the opening twentieth century than his early church at Bingley is of the High Victorian. Outside church architecture the intervening Late Victorian can hardly be defined except in terms of his various manners, and even in church architecture he had a real contribution to make.

Yet Shaw cannot be rated with Soane or Schinkel as a nineteenth-century architect of absolutely the first rank; nor yet with his American contemporary Richardson, even though Richardson's career came to an end a score of years before his. Shaw's work reflects all too clearly, despite his own vast and sanguine assurance, the general uncertainties of the years after 1870. Webb, much less successful and famous than Shaw, eventually had more influence, not on English architecture as a whole, but on the more creative and original men of the next generation. The later history of European architecture

would be much the same – if not that of American architecture – had Shaw never existed; but the modern architecture that first came into being after 1900 in various countries of Europe owed a good deal directly, and even more indirectly, to Webb. In this way Richardson also has more significance than Shaw, despite his lack of influence abroad, for Sullivan and Wright in America both learned much from him.

Norman Shaw was born in Edinburgh in 1831. Brought early to London, he was taken on in his early teens by Burn, the Edinburgh architect then settled in London, who had so great a success designing Jacobethan and Scottish Baronial mansions for the high aristocracy in the forties and fifties. Shaw also studied at the Royal Academy, winning in 1853 their Silver Medal, and in the next year their Gold Medal, with the award of a Travelling Studentship that took him to Germany, Italy, and France. The project which won him the first medal was a surprising production for its period, and quite without relation to his own High Victorian Gothic work of the next decade that has been described earlier (see Chapter 11). A vast design for a college with central domed block and side pavilions loaded with giant orders, this project is more Vanbrugh-like than Second Empire. In some sense Shaw's career was to come full circle stylistically; but even in the Gaiety Theatre in the Strand in London of 1902–3 and the still later Piccadilly Hotel he would hardly be as whole-heartedly Neo-Baroque again.

In 1858 Shaw published, as has been mentioned before, what is perhaps the most attractive of High Victorian Gothic source-books, *Architectural Sketches from the Continent*, based on his European studies; doubtless on the strength of this book he became at this time, or shortly after, Street's principal assistant – chief draughtsman, one might call it – in succession to Webb.[2] There he remained for four years, leaving in 1862 to form a partnership with Nesfield, whom he had first known in the early fifties in Burn's office. As has already been noted, Nesfield was the son of Barry's collaborator in garden design on all his major country house commissions. Younger than Shaw, Nesfield had gone to Burn's office in 1850 a year or two after leaving Eton, and in 1853 had moved to the office of his uncle Anthony Salvin, another successful builder of aristocratic country houses. Nesfield, in this year 1862, issued a book rather like Shaw's of four years earlier, as has been mentioned in connexion with his work for Lord Craven at Combe Abbey. Other aristocrats with whom he had connexions through his father soon began to employ him on more modest jobs.

Building lodges and other accessories to great country estates, and in 1864 one in Regent's Park where everyone might appreciate his highly personal touch, Nesfield revived in effect the Picturesque Cottage mode of half a century earlier. But the materials he used were more various,[3] including tile-hanging and pargetting, and his designs had a general finesse that was much more craftsmanslike than those of the slapdash Nash and his rivals in this genre (Plate 50A). In Nesfield's first major work, Cloverley Hall in Shropshire, begun in 1865, several characteristic features appear for which his lodges hardly prepared the way (see Chapter 15). There a tall great hall provided the principal interior, and the areas of mullioned windows in the Tudor tradition were so extensive as to constitute real 'window-walls' (Figure 24). His very refined and ingenious ornamentation at Cloverley, much of it of Japanese inspiration, has been mentioned.

Even earlier, in 1862, when Japanese art was just beginning to be an inspiration to advanced painters in Paris and in London and the Japanese Government first sent examples of characteristic work to an international exhibition, Godwin, who was just at that point throwing off the influence of Ruskin, had stripped bare the interiors of his own house in Bristol and decorated them only with a few Japanese prints asymmetrically hung. By 1866 Godwin was designing wallpapers of notably Japanese character for Jeffry & Co. and from 1868 'Anglo-Japanese' furniture for the manufacturer William Watt.[4] But *japonisme* is only a minor theme of this period, and it hardly influenced Shaw at all.

Half a century earlier the prestige of a ranking novelist, Sir Walter Scott, had helped to launch one of the most popular Picturesque modes, the Scottish Baronial, when he asked Blore to imitate the old Border castles in designing his house at Abbotsford. Now in 1861 Thackeray, a novelist many of whose novels were set, not in the Middle Ages, but in early eighteenth-century England and Virginia, designed for himself a house in Palace Green in London opposite Kensington Palace, much of which is more or less of that particular period. This house echoes the modest red-brick manor houses of the time of Queen Anne on both sides of the Atlantic, but it could hardly be less plausible. At the same time Wellington College by John Shaw (1803–70), which was begun in 1856, was reaching completion in a much richer, almost Second Empire, version of the Wren style of 1700.

The programmatic revival of the Queen Anne mode really began a few years later with a small public commission of Nesfield's. His lodge at Kew Gardens, designed in 1866 and built in 1867, though very simple, is a quite archaeological exercise in early eighteenth-century [5] brickwork (Figure 18). This Kew lodge he followed up a few years later with a big but remote country house, Kinmel Park near Abergele in Wales, built in 1871–4 though possibly designed a bit earlier. To this we will be returning shortly. Shaw had nothing to do with Kinmel Park, since his partnership with Nesfield came to an end in 1868; that was just after the completion of Cloverley Hall on which he certainly collaborated even if his personal contribution there cannot now be readily distinguished. Already in 1866, before Shaw parted from Nesfield, however, his own career had opened with the designing of the Bingley church (Plate 94A) and of Glen Andred, near Withyham in Sussex, a house of great originality of character (Plate 102B).

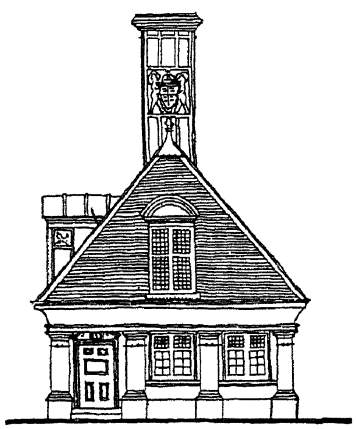


Figure 18. W. Eden Nesfield: Kew Gardens, Lodge, 1867, elevation

Glen Andred is little more related to the new Queen Anne mode of the Kew lodge than it is to the Gothic of the Bingley church. It does, however, seem to derive somewhat from earlier Nesfield work, or possibly from Devey. Where the High Victorian Gothic had rejected English precedent in favour of Italian and French models, this first Sussex house of Shaw's is resolutely regional in character. The tile-hung walls above a red-brick ground storey, the white-painted wooden casements, almost as

extensive as the 'window-walls' of Cloverley, the loose asymmetrical organization of the massing are all related to a local Sussex and Surrey vernacular of no particular period (Plate 102B). The entrance front is more formal, carefully balanced if not precisely symmetrical, and here the pargetting in the central gable is of Jacobethan character. But the great stair-window and the graceful massing of the tiled roofs, quite in the finest tradition of the Picturesque but handled with a new ease and casualness, are more important elements of Shaw's first manner, which can be called 'Shavian Manorial'. The hall across the front between the two projecting wings is modest in size, with the principal living rooms loosely grouped round it. Thus the plan may be considered an early example of what can be rather clumsily called the 'agglutinative' type, but as it was never published the extent of its actual influence must remain uncertain.

There was little logic to Shaw's regionalism. Already in 1868 he was applying his Sussex vocabulary of materials and forms to the Cookridge Convalescent Hospital at Horsforth near Leeds in stony Yorkshire. In general, however, he kept this manner for work near London, using it even as late as 1894 for a house called The Hallams near Bramley in Surrey. He also introduced tile-hanging on some of his houses in London such as West House, at 118 Campden Hill Road, of 1877 and Walton House in Walton Street of 1885 as well as – rather more appropriately – on the suburban Hampstead house that he built in the same year for Kate Greenaway at 39 Frognal.

Shaw's first client had been a painter, J. C. Horsley, R.A., for whom he made some alterations in the early sixties and whose son later entered his office. Glen Andred was for another painter, E. W. Cooke, later R.A., and West House was for George Boughton, R.A. Kate Greenaway, better known today than these forgotten academicians, was an illustrator of children's books much patronized by Ruskin. F. W. Goodall, R.A. (1870), Marcus Stone, R.A. (1876), Luke Fildes, R.A. (1877), Edwin Long, R.A. (1878, and again in 1888), Frank Holl, R.A. (1881), are other successful painters and fellow academicians – Shaw became an A.R.A. himself in 1872 and an R.A. in 1877 – for whom he built houses (with the dates of the commissions). All but Goodall's house at Harrow Weald were either in the Melbury Road in Kensington in London or else in Fitzjohn's Avenue near his own Hampstead house of 1875 at 6 Ellerdale Road. Where the prosperous artists, themselves presumably aping the aristocracy, led, magnates and City men were now quick to follow. The Newcastle steelmaster Sir William Armstrong had Shaw build Cragside near Rothbury in Northumberland for him as early as 1870.

Leyswood, near Withyham in Sussex, begun in 1868 at the same time as the Cookridge Hospital, was one of Shaw's most influential works (Plate 123). More archaeologically manorial than Glen Andred, it provided a mass of suggestions that English and American architects borrowed again and again over the next twenty years and more. Because of Shaw's later leadership, it is natural for posterity to note what was new here; contemporaries, used to the wild vagaries of the High Victorian Gothic, saw Leyswood rather as a reaction against the 'modernism' of the fifties and earlier sixties. Tile-hung upper storeys and barge-boarded gables, richly half-timbered – the half-timbering a mere sham applied over solid brickwork! – long banks of casements that approach the twentieth-century 'ribbon-window' and great mullioned bays providing 'window-

walls' as extensive as Nesfield's at Cloverley clothed a plan that is not at all medieval but a more developed example than Glen Andred of the 'agglutinative' type (Figure 19). The main reception rooms were grouped about a central hall, from one side of which rose elaborate stairs arranged in several flights about an open well. Webb had already essayed this sort of planning in a more orderly way at Arisaig, begun in 1863

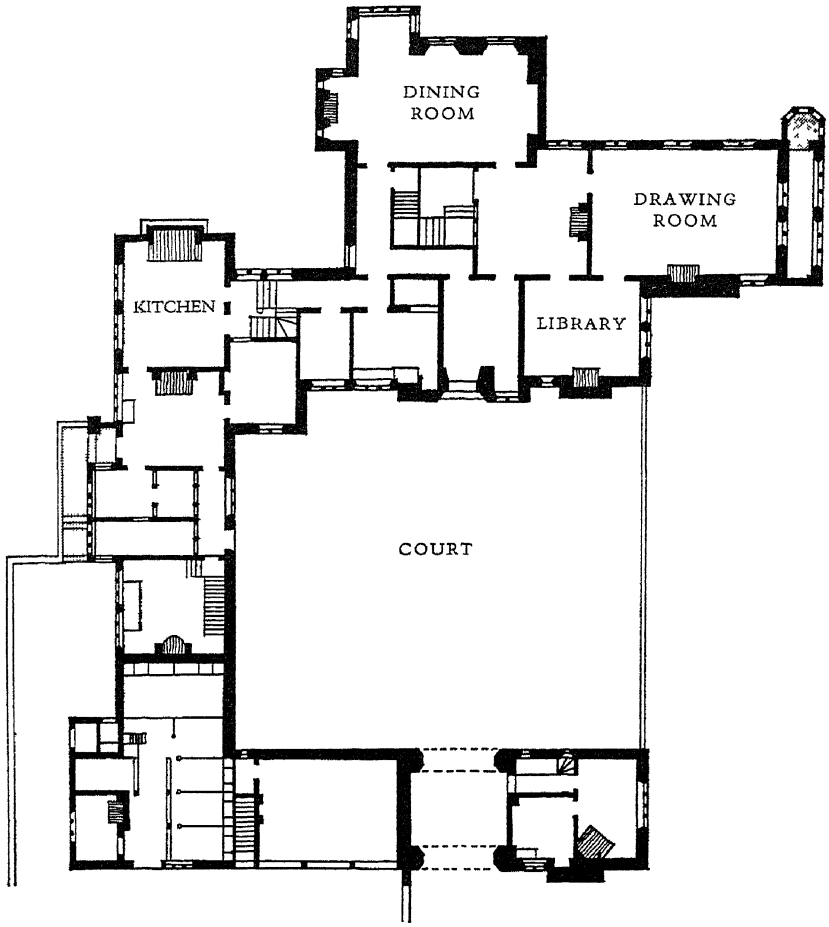


Figure 19. Norman Shaw: Leyswood, Sussex, 1868, plan

(Figure 23); but it was Shaw's version, not Webb's, that was generally imitated (see Chapter 15).

Shortly after Leyswood, and following fairly closely its manner although with fewer Late Gothic elements of detail, came the house later called Grim's Dyke built at Harrow Weald in 1870–2 for F. W. Goodall, afterwards the country house of the composer W. S. Gilbert, and Preen Manor in Shropshire also designed in 1870. Then followed Hopedene, near Holmbury in Surrey, and Boldre Grange, near Lymington in Hampshire, in 1873; Wispers, Midhurst, in Sussex, in 1875; Chigwell Hall in Essex, and Pierrepoint, near Farnham in Surrey, in 1876; Merrist Wood near Guildford in Surrey, and Denham at Totteridge in Hertfordshire, in 1877; and so on down into the nineties.

After their showing each year at the Royal Academy Exhibition Shaw's brilliant pen-and-ink perspectives of these houses were published photo-lithographically in the professional press; moreover, from 1874 the plans were usually given as well, the first published being that of Hopedene. Not surprisingly these were the most influential of Shaw's works abroad, providing in the late seventies and early eighties some of the most important prototypes for the American 'Shingle Style' (see Chapter 15). Beside them, moreover, Webb's more prominent London works of the late sixties, the house for George Howard, later Earl of Carlisle, built in 1868 near Thackeray's in Palace Green, Kensington, and the small office building at 19 Lincoln's Inn Fields, also of 1868, appear somewhat cranky and overstudied, still rather too Gothic in detail, and lacking above all the ease of his country-house work. However, the modest London studio-house at 14 Holland Park Road, Kensington, which was designed in 1864 and built in 1865 for Val Prinsep, like Morris and Spencer Stanhope one of the crew of artists who worked on the decoration of the Oxford Union, must have been more like the Red House and Benfleet Hall before it was recurrently enlarged by Webb in the following decades. Another London studio-house for the water-colour painter G. B. Boyce at 35 Glebe Place, Chelsea, which was begun in 1869, is in much better condition today and quite exemplary in its quiet way.

At this point came Nesfield's Kinmel Park. Shaw and other advanced architects must have been aware of the character of the designs for this house from the first, even though it was neither shown at the Royal Academy nor published then, and took some four years to complete. Kinmel is much more complicated stylistically than Nesfield's Kew lodge of 1866–7, but it offer the next step in the development of the new Queen Anne mode. At first sight it might appear to be related rather to Second Empire work, for the main block on the entrance side is symmetrical, high-roofed, and dominated by a bold central pavilion. Moreover, the detailing of the red-brick façades with their profuse light-coloured stone trim is almost as French of Louis XIII's time as it is English of Queen Anne's day. The garden front, which is carefully ordered but not symmetrical, and the service wing to the south, much more loosely composed and with a profusion of small-paned double-hung sash-windows and dormers, are more definitely English and also more original.

Webb had been using such windows and even approaching the Late Stuart vernacular in his houses for a year or two before Kinmel was begun. This was most evident at Trevor Hall (Figure 25), built at Oakleigh Park near Barnet in Hertfordshire in 1868–70, for that modest country house was quite symmetrical in design although almost devoid of any sort of 'period' detail, whether Gothic or Late Stuart. To more acclaim, Webb had also been responsible for designing with William Morris a little earlier, in 1866 and in 1867, the Armoury in St James's Palace and the Refreshment Room in the Victoria and Albert Museum. The former, particularly, is a very original masterpiece of nineteenth-century decoration, hardly at all related to the contemporary High Victorian Gothic, yet reflecting the eighteenth century only as regards the treatment of the wainscoting and the door and window casings (which may well be, at least in part, of eighteenth-century date).

Just after 1870, while Kinmel was still in construction, the main line of development moved from the country into London. The Education Act of 1870 required the building of innumerable new schools, particularly by the London School Board. Among the architects successful in the first competitions that were held for designs for these schools were E. R. Robson (1835–1917) and J. J. Stevenson (1831–1908); they used a non-Gothic vocabulary in London stock bricks trimmed with red bricks cut or moulded along seventeenth-century vernacular lines.[6] This mode was not unrelated to the more definitely Queen Anne models provided by the Kew lodge and by Kinmel, but the new London schools were more irregular in composition and naturally much more cheaply built. Robson, appointed architect to the London School Board in 1871, soon made this mode ubiquitous for schools in London County, and this, of course, before long influenced Board School design nationally.

In 1871 Stevenson, like Shaw a Scot out to make a London reputation, built a new house for himself in what is now Bayswater Road. This he named the Red House, like Morris's at Bexley Heath of a decade earlier, in order to call attention to the fact that its brickwork was not covered with stucco but exposed like that of the Thackeray and Howard houses in Palace Green. In fact, however, it was built like the Board Schools of brownish stock bricks with red-brick detail elaborately moulded, gauged, and cut in the Late Stuart way. Although Stevenson's house had little of the real elegance of Kinmel or the natural ease of Shaw's manors, its novelty and its fairly conspicuous location would have attracted attention in any case. But Stevenson, a very accomplished publicist, saw the advantage of accepting for this hybrid mode a name, 'Queen Anne', that was certainly no less applicable to Nesfield's Kew lodge and Kinmel or even to Robson's schools. Thus was a sort of Queen Anne Revival at last formally launched.

Two new buildings in London by Shaw, begun in 1872 and in 1873, were definitely in the new mode. Only at this point, indeed, does the term Queen Anne begin to make any sense as applied to Shaw's work. Despite the valid claim to priority that Stevenson made for his Red House in a paper read in 1874 at the Architects' Conference 'On the recent reaction of taste in architecture' in which he claimed the Queen Anne mode was a 'Re-Renaissance' (*sic*), and his own relative success from this time on as a fashionable London house-architect, the Queen Anne became Shaw's from the moment that he first turned his hand to it in 1872. Whether the original idea came to him from Devey or from Nesfield – he had probably worked himself on the drawings for the Kew lodge – or was merely an attempt to outbid a rival Scotsman on the London scene makes no real difference.

New Zealand Chambers, the office building which Shaw erected in 1872–3 in Leadenhall Street in the City, was certainly totally unlike anything the Age of Anne ever saw except for the cut-brick detailing of the pedimented entrance. Boldly projecting red brick piers divided the tall façade into three bays, while between them rose oriel windows broken by ornately sculptured spandrels imitated from the mid-seventeenth-century ones on Sparrow's House at Ipswich. The small panes and thick white sash-bars of these windows made the scale surprisingly domestic in contrast to the usual boldness of High Victorian commercial work, and the whole composition was effectively tied to-

gether by an ornately pargeted cove cornice that ran straight across the top (see Chapter 14). Above this the rather simple range of continuous dormers in the roof was very much in the spirit of the 'ribbon-window' bands on his country houses.

So dazzled were contemporaries by the lush exuberance of Shaw's ornament on the spandrels and the cove that they hardly noticed the way in which the bold articulation of this façade by the brick piers, with the areas between nearly all window, frankly reflecting the internal iron construction, provided most satisfactory lighting for the offices; nor that Shaw, while keeping his scale intimate in all the detailing, was not afraid to stress the verticality of his façade by avoiding emphasis on the storey lines. Only the weaker features of the design – the arbitrary asymmetry of the entrance, the profuse ornamentation, and the underscaling – were generally imitated.

Lowther Lodge, built in 1873–4, a large free-standing mansion in Kensington Gore, still survives – it is now the home of the Royal Geographical Society – as New Zealand Chambers does not. Here the vocabulary of cut and moulded brick is more consistently Late Stuart, although the general composition, with many gables, two tall polygonal bay-windows, quantities of dormers, and tall fluted chimney stacks, is as romantically complex as that of Shaw's manors in Sussex and Surrey. However, both the front and the rear façades, when studied, will be found to approximate symmetry in their principal portions as does the front of Glen Andred; and the main rooms inside, the hall at the front and the drawing-room behind, are quite symmetrical and have recognizably Early Georgian (rather than specifically Queen Anne) fireplaces and door and window casings, although their grouping is still, so to say, agglutinative.

In a Surrey house of the same date, 1873, like Trevor Hall unhappily demolished, Webb moved rather farther in a similar direction. Joldwynds near Dorking was quite as symmetrical as Trevor Hall but even less Gothic. The vocabulary of tile-hanging on the upper storeys, with weather-boarding in the gables, was as authentically regional as that of Shaw's nearby houses, but the vaguely eighteenth-century vernacular of the detailing was much simpler than Shaw's repertory of moulded and cut brickwork at Lowther Lodge.

Nesfield, in designing what is now Barclays Bank in the Market Square of Saffron Walden in Essex, remained more eclectic, staying closer to the manorial mode of Cloverley Hall and using again various Japanese motifs in the rich decoration. This was built in 1874. Godwin, who had just moved to London with the actress Ellen Terry and was now largely occupied with designing stage sets, developed further in the rooms of their rented house in Taviton Street in 1873–4 the Anglo-Japanese mode of his interiors of ten years earlier in Bristol. In 1874 he also arranged an exhibition of paintings in a similar spirit for his friend the painter Whistler at the new Grosvenor Galleries.[7]

In the mid seventies, however, it was Shaw, not Nesfield or Godwin, who occupied the centre of the architectural stage. In the Convent of the Sisters of Bethany of 1874 in St Clements Road at Boscombe near Bournemouth he combined the use of concrete, then a relatively new building material, with his familiar Sussex vernacular. He did the same in a slightly later series of designs for cottages made of patented prefabricated concrete slabs.[8] It is worth noting, moreover, that the internal iron skeleton above the bold

cantilever on the front of his Old Swan House (Plate 103) of 1876 at 17 Chelsea Embankment in London provides in effect an example of what would later be called 'skyscraper construction', since it carries completely the weight of the brickwork of the upper walls; this was a decade before the 'invention' of this sort of construction in Chicago (see Chapter 14). Shaw's interest in technical developments and his enthusiasm for new materials and methods was evidently very great, always provided that he could bend them to his particular sort of retroactive pictorial vision. When he built the Jury House for the Paris Exhibition of 1878 of patent cement bricks, for example, he designed the façade very elegantly in his Late Stuart manner just as if it were of cut and moulded clay bricks. Godwin and Whistler, however, were showing at this same exhibition an Anglo-Japanese room of highly original character in association with Watt the furniture manufacturer.

Shaw's excellent church of this period at Bournemouth, St Michael's and All Angels, Poole Hill, begun in 1873, is Late Victorian in the crispness and clarity of its design but less archaeological than those of this date by Bodley. It seems to indicate that he could have made a great reputation as a church builder had he not been absorbed with secular work. But by the seventies secular work once again provided the field of major prestige in England, as it had hardly done since 1840, and so Shaw concentrated on it. Having revolutionized country-house design, he now turned, more definitely than at Lowther Lodge – by its size and open siting more a country house set in the city – to urban and suburban domestic work. In these his conquest was even more complete, at least in England and, as regards the suburbs, in America.

The Old Swan House and its neighbour Cheyne House at the outer end of the Chelsea Embankment, respectively of 1876 and 1875, are both mansions rather than ordinary terrace houses. They also represent a considerably further advance along the road towards a formal eighteenth-century revival than Lowther Lodge. Old Swan House is completely symmetrical, and the upper storeys are also quite regularly fenestrated in the early eighteenth-century way (Plate 103). However, the total effect is still highly Picturesque because of the way these upper storeys are cantilevered forward; from the cantilever depend, moreover, elaborate oriels of much earlier character very similar to those Shaw had introduced at New Zealand Chambers. Such oriels he long continued to employ; they are not only a principal feature of his own house in Hampstead, built in this same year, but also of the much later Holl and Long houses. Cheyne House occupies an irregular curving plot with the entrance in Royal Hospital Road; but Shaw used all his considerable ingenuity to give it a symmetrical façade, even though the plan actually has little of the orderliness of that of Lowther Lodge.

If these two Chelsea houses seem to presage an early return to the serenity of Georgian street architecture, Shaw's J. P. Heseltine house of 1875 at 196 Queen's Gate in South Kensington unleashed a flood of the most individualistic house-design London had ever seen. Stucco-fronted houses of builders' Renaissance design were still being erected on contiguous sites when this tall gabled façade rose, totally oblivious of old and new neighbours. Cut brick, moulded brick, terracotta, all of the brightest red, surround very large mullioned windows in a composition that is gratuitously asymmetrical at

the base but symmetrical in the upper storeys below the crowning gable. For fifteen years such houses proliferated in the Chelsea, Kensington, and Earls Court districts of western London. The best are by Shaw himself, such as those at 68, 62, and 72 Cadogan Square – the first of 1879, the others of 1882 – and those at 8–11 and 15 Chelsea Embankment of 1878–9; but more are by other architects, and the vast majority by builders. In the Chelsea Embankment range River House at No. 3 is by Bodley; Nos 4–6 are by Godwin; and No. 7 is by R. Phéné Spiers (1838–1916), an architect whose Parisian training did not restrain him from following Shaw.

Collingham Gardens of 1881–7 by Sir Ernest George (1839–1922) and his then partner Peto, a sort of square with variously designed houses, all individually gabled, opening on to a lawn in the centre, provides a still more complete illustration of what may be called Neo-Picturesque urbanism. Not at all Shavian, the detailing of many of these houses is very similar to that of Cuijpers's Rijksmuseum and none of it Queen Anne. The contiguous mansions that George & Peto built in 1882 near by in Harrington Gardens, one for W. S. Gilbert at No. 19 (Plate 104B), the other for Sir Ernest Cassel, the banker, are the most elaborate single London examples of their domestic work. The house of the composer of the Savoy Operas approaches very closely the German Meistersinger mode of the period, but the touch is much lighter – intentionally whimsical perhaps? – and both the organization of the whole and the execution of the profuse detail is very superior to what one finds in most contemporary German work (see Chapter 9).

Stevenson's best and most Shavian houses in London are two that he built in 1878 in partnership with A. J. Adams in Lowther Gardens behind Lowther Lodge; however, those he built at 40–42 Pont Street have a certain interest because the mode that he exploited here is often called 'Pont Street Dutch', so ubiquitous is it in this part of Chelsea. This name also emphasizes the characteristic tendency of the late seventies and eighties towards varying the English late seventeenth-century vernacular mode by the introduction of Dutch and Flemish elements of detail, usually executed in terracotta, as George & Peto did in most of the Earls Court houses mentioned above. Thus, around 1875, the long-established London tradition of coherent terrace design came finally to an end. That was, on the whole, a real urbanistic misfortune, however excellent some of the best individual houses by the above-mentioned architects may be.

Shaw's venture into the suburbs initiated a new domestic tradition of positive value and also a tradition of 'planning' that has continued with some modification down to the present, both in England and abroad. At Bedford Park, Turnham Green, then well beyond the western edges of built-up London, Shaw laid out in 1876 and largely designed an early 'Garden Suburb' (see Chapter 24), in fact, almost a 'new town', similar in some ways to the New Towns of the present post-war period, but without any industries of its own. Small houses, mostly semi-detached, i.e., in pairs, stand in their own gardens, simply and casually built of good red brick with a certain amount of modest Queen Anne detailing. The scheme is very complete, including a church by Shaw that is most ingeniously styled to harmonize with the domesticity of the houses, a club, a tavern, shops, and so forth.[9] Godwin's assistant Maurice B. Adams (1849–1933) and E. J. May

(1853–?) also worked here, as well as Godwin himself; indeed, some of the best houses are not by Shaw but by Godwin.

With characteristic versatility, while the construction of Bedford Park was proceeding in this simplified version of his middle manner, Picturesque but distinctly anti-Gothic, Shaw was also erecting at Adcote in Shropshire in 1877 a very large Tudor manor house in stone. This is notable for its restrained, almost 'abstract', detailing and for the tall mullioned window-wall of the hall bay, more than rivalling that of Cloverley Hall. Flete, a still larger house in Devon begun the year after Adcote, is also Tudor. Dawpool in Cheshire, demolished in 1926, was begun in 1882 in much the same mode but was even more extensive and elaborate than Flete. J. F. Doyle (? – 1913) of Liverpool collaborated on this.

The Bedford Park church of 1878, St Michael's, is more or less Queen Anne, at least not at all Gothic. But at Ilkley in Yorkshire Shaw's St Margaret's of the previous year is a remarkably personal essay in the Perpendicular, low and broad and elegantly detailed. In quality this is well above his earlier Bournemouth church and rather more original in its proportions than the standard work of Bodley and his imitators at this time. Somewhat similar, and still more original, is St Swithin's in Gervis Road in Bournemouth, also of 1877; while All Saints', Leek, of 1886 carries almost to the point of parody the Shavian stylization of English Late Gothic proportion towards the broad and low – visually, that is; ritualistically they are quite as 'High' as Bodley's.

Next Shaw produced his finest and most creatively conceived church, Holy Trinity, Latimer Road, comparable in quality to his early church at Bingley but wholly different in character. This was built in 1887–9 for the Harrow Mission in a poor district of western London. The interior of Holy Trinity is a single vessel, very broad and moderately low, covered by a flat-pointed wooden ceiling which is tied by vigorous horizontal members of iron cased in wood and heavily buttressed externally (Plate 106A). Behind the chancel, which is no more than a square dais on which the altar is raised, rises an ecclesiastical version of the Shavian window-wall, broad and low like the space it terminates but arched and lightly traceried at the top. The result could hardly be more different from Shaw's domestic Queen Anne of these years. It is on such things as this church, in which his basic architectural capacities are revealed unconfused by frivolous elaboration of detail, that his claim to high talent, occasionally to genius, must be based.

If Shaw did not cease to design churches while continually extending the range of his secular practice, it is a still more notable testimony to the breadth of his approach that he built in 1879, in Kensington Gore between the Albert Hall and Lowther Lodge – and with a characteristic disregard for both – the first really distinguished block of flats erected in London; the first, that is, unless one counts the Second Empire ones of the late sixties in Grosvenor Gardens. The tall and extensive mass of this block, like that of most of his houses of the period, is extremely picturesque in silhouette because of the very tall and ornate gables that face the Park. But these are quite regularly spaced and the walls below them, with the multitudinous segment-arched, white-sashed windows all evenly phrased in threes, illustrate Shaw's Queen Anne of the seventies at its most disciplined (Plate 104A).[10]

As has been noted, Shaw was by now the preferred architect of most of his fellow Royal Academicians. Webb had built houses for several of the Pre-Raphaelite painters who were his friends and associates. Less successful and more advanced painters employed Godwin. Small though it is and now much remodelled, the White House in Tite Street round the corner from the Chelsea Embankment, which Godwin built for his friend Whistler in 1878–9, has one of the most original façades of the decade. As its name implies, although all of brick, it was not 'red' like Morris's and Stevenson's famous houses, but 'white' because the walls were so painted,[11] recalling perhaps the white-painted Colonial farmhouses of Whistler's New England youth. The sparse detail is related in its vaguely eighteenth-century character to the Shavian Queen Anne, but it is much more delicate and linear, indeed almost Late Georgian in inspiration. Most significantly, the composition of the façade as a whole, and even more evidently the asymmetrical placing of the door and windows, owes a great deal to those abstract principles of Japanese art which both Whistler and Godwin had been studying for almost twenty years.

Whistler had to sell his house almost as soon as it was finished in order to pay the costs of his unhappy libel suit against Ruskin, a legal battle in which the Late Victorian and the High Victorian came to violent grips. But Godwin went on to build several more studio houses in Tite Street at Nos 29, 33, and 44 in the next few years and also the Tower House in 1885. Similar, but inferior, is No. 31 by R. W. Edis, which John Singer Sargent later occupied. Also in Tite Street is the commonplace terrace house at No. 16, of which the interiors were decorated by Godwin for Oscar Wilde,[12] the greatest aesthete of them all. Wilde's influential ideas in this field, carried to America on a lecture tour in 1881–2, were largely derived from Godwin, it may be noted.

When Shaw turned again to commercial work it was to design in 1881 the offices for the bankers Baring Brothers at 8 Bishopsgate in the City of London. This small building was as discreet, as orderly, and almost as domestic as Cheyne House. But the next year, so chameleon-like was his development, the prominently located Alliance Assurance Building at the corner of St James's Street and Pall Mall opposite St James's Palace has broad, low, banded arches of brick and stone below and vertical articulation above elaborated with profuse sculptural ornamentation.[13] Very tall and scallopy gables provide a Neo-Picturesque effect only too comparable to the most vulgar 'Pont Street Dutch' houses designed by his rivals or even to contemporary Northern Renaissance work on the Continent. To emphasize his variousness further, there is diagonally across the street a later edifice for the same clients, built in collaboration with his pupil Ernest Newton (1856–1922) in 1903, so quietly academic in the Neo-Georgian taste of the early twentieth century that one can hardly believe it is also Shaw's.

His next important secular works after the first Alliance building, both begun in 1887 like the Latimer Road church, contrast with each other almost as markedly as they do with that. Characteristic of the essentially private patronage – patronage from successful artists, patronage from business, patronage from the professional classes – responsible for the best English architecture of this period is the fact that Shaw's first public commission came only at this advanced stage of his career. London's Metropolitan Police Offices in

New Scotland Yard, of which the original block was built in 1887–8 and the second block to the south added in 1890, have a splendid site on the Thames Embankment. Remembering, it would seem almost for the first time, his own Scottish birth – or possibly in apposite reference to the familiar name of the London police headquarters – Shaw designed Scotland Yard somewhat like a Scottish castle with corner tourelles and tall curved gables, but using throughout heavy and rather academic later seventeenth-century detailing of a much less regional sort (Plate 106B). Red brick and stone in combination make it also as colouristic as the Alliance building, the solidity of the proportions makes it weighty, and the high gables and tower roofs give it great variety of outline. As a result, the total effect is almost High Victorian in its vigour and its massiveness. Shaw is said to have regretted the need to build a second block; certainly it must have been more impressive when the original block stood alone like an isolated riverside fortress.

Scotland Yard seems to look backward somewhat, at least in relation to that gradual development towards orderliness and restraint of an eighteenth-century sort which can be discerned in Shaw's work of the seventies despite all its variousness. On the other hand, the house that he built in 1887–8 for Fred White,[14] an American diplomat, at 170 Queen's Gate, so near to that strikingly aberrant terrace house of the previous decade at No. 196, seems to look forward into the early twentieth century, when the eighteenth-century Georgian would provide the basis for a quite archaeological revival. This plain rectangular block of red brick, orderly and symmetrical on the long façade towards Imperial Institute Road and also on the end towards Queen's Gate, with three ranges of large sash-windows below an academic cornice, is therefore as much a historical landmark, if not an original creation, as was Glen Andred twenty years before (Plate 105). The suave and well-scaled ornamentation is concentrated at the doorway in the eighteenth-century manner, and the hip roof is unbroken except by regularly spaced dormers. Yet, curiously enough, the plan is somewhat less completely regular and symmetrical than one might expect from the exterior; for example, the large drawing-room towards Queen's Gate is L-shaped.

Only the excellence of the craftsmanship here, based not on the Sussex vernacular but on the most sophisticated work of around 1700, the prominence of the tall chimneys, and the wide central dormer with its curved top reveal Shaw's hand and suggest, perhaps, an early date; otherwise such a house might well have been built forty years or so later by many other architects, English and American (see Chapter 24). However, Webb at Smeaton Manor in Yorkshire, built in 1877–9, had already arrived at an almost identical regularity and formality of design (Plate 102A). Characteristically, however, he did not elaborate the exterior with borrowed eighteenth-century detailing, and the house remains almost undatable on internal evidence, like much of his best work.

Scotland Yard is an all but unique example of an English public building of distinction erected in the eighties. Before continuing with the account of Shaw's work in the nineties, two prominent features of the London skyline, the most striking additions made since Butterfield's spire of All Saints' rose in Margaret Street in the fifties and the Victoria Tower of the Houses of Parliament was completed in the sixties, should be

mentioned. Both the Imperial Institute, towering over Shaw's contiguous Fred White house in South Kensington, which was built in 1887–93 in honour of Queen Victoria's first jubilee, and the Catholic cathedral of Westminster, not begun until 1894, are especially notable for their very tall dome-topped towers. The cathedral, which was designed by J. F. Bentley (1839–1902), a pupil of Clutton, has also a magnificent domed interior. The Institute, built by T. E. Collcutt (1840–1924), is perhaps of less over-all interest but extremely refined and elegant in its detailing compared to the contemporary work of George & Peto, which it most closely resembles. Curiously enough, the very underscaled membering and even so dainty a trick as the use of single courses of red brick here and there in the stonework does not make the 280-foot tower petty. It may be compared to its own very great advantage with Haller's contemporary tower, in a somewhat parallel Northern Renaissance vein, on the Hamburg Rathaus. Collcutt's own earlier tower on the Town Hall at Wakefield in Yorkshire of 1877–80 was distinctly less successful.

Bentley's tower has a similar silhouette, but is more boldly striated by broad bands of brick and stone. The detail, partly Byzantine, partly Early Renaissance despite his distinguished early career as a Late Victorian Gothic church architect, is, like Collcutt's, rather underscaled. This goes still further to prove the extent to which this period in England saw all architecture, even that of cathedrals, in domestic terms. However, well before Bentley began his cathedral – it is not even yet completed as regards the internal decoration – Shaw had turned towards considerably more monumental forms at Scotland Yard, and even to quite academic design.

At Bryanston, a large country house in Dorset begun in 1889 for Lord Portman, Shaw modelled the main block on Sir Roger Pratt's Coleshill House of the mid seventeenth century; the side wings here are quite Gibbsian. This is the earliest example of what the English call 'Monumental Queen Anne' – to distinguish this sort of work henceforth from the freer and more vernacular Queen Anne of the seventies and eighties – and the Americans 'Georgian Revival'. Two years later Shaw built Chesters in Northumberland. This mansion is equally academic, if less derivative from particular sources; but it is also highly original in plan and conception. The composition of the incurved façade planes, moreover, is as knowing and as ingenious in its formal way as anything he ever built in a more rambling vein.

Later in the nineties Shaw's stylistic uncertainty – or, if one wishes to call it so, his versatility – was notably illustrated in two large commercial buildings built in Liverpool. The façade of Parr's Bank in Castle Street there, which he built in 1898 in collaboration with the local firm of Willink & Thicknesse, is of the suavest academic order. Its proportions are surer than in any of his other works except Chesters, and yet he striated its light-coloured stonework with bands of green marble in a way few later architects working in this vein would ever have thought of doing. Two years later, in the offices that he built in collaboration with Doyle for Ismay, Imrie & Co., later the White Star Line – for whom he also designed the interiors of the liner *Oceanic* – he provided what was externally almost a copy of Scotland Yard, and yet inside he exposed the riveted metal structural members in a fashion at once frank and highly decorative.

If Shaw had had the opportunity to rebuild Nash's Regent Street Quadrant completely according to the designs that he prepared in 1905 the loss of the original work might not be so serious. Approaching seventy-five, he turned here to a Piranesian Classicism. The colonnaded section finished in 1908, which forms the northern front of the Piccadilly Hotel, though flanked at both ends by an emasculated version of Shaw's design carried out in 1923 by his disciple and biographer Sir Reginald Blomfield (1856–1942), rivals in boldness anything English architecture had produced since the days of Vanbrugh and Hawksmore. Even more spectacular, and also incomplete, since the gable at the east end was never built, is the Piccadilly façade of the hotel with its tremendous open colonnade raised high against the sky (Plate 107). The Classical serenity of this feature is characteristically contrasted with the voluted silhouette of the tall gable over the projecting wing at the west end, and the exuberance of the whole puts most other Edwardian Neo-Baroque to shame.

To summarize Shaw's achievement or even to epitomize his personal style is almost impossible. He was, for example, in no ordinary sense of the word merely an eclectic; yet his modes were very various, more various than those of almost any other nineteenth-century architect of equal rank. After his first borrowings from Nesfield, however, they were all his own – his own, at least, until hordes of other architects in England and America took them up, one or two at a time, often vulgarizing them beyond recognition. He was probably not the most talented English architect of his generation and certainly not the most original. How much he owed to Nesfield at the start it is impossible to estimate, even though at least two of the characteristic Shavian modes seem to have been originally of his invention – if not, indeed, of Devey's!

Yet ironically Nesfield's own later work appeared to contemporaries almost like an echo of Shaw's if it was known at all. He never had any such success as did Shaw, and died relatively young in 1888. Godwin also was somehow never able, after 1870, to repeat the public triumphs that had been his in the competitions of the early sixties. In his later life he turned more and more to designing sets and costumes for the theatre and died in 1886, two years before Nesfield. Webb lived on till 1915, although he retired from practice in 1900; his spirit, moreover, lived on in a quite different way from Shaw's. It was through emulation of the craftsman-like integrity of Webb's work that the attitudes, rather than the forms, of Pugin's earlier Gothic Revival were transmitted to the first modern architects quite as much as through study of the writings of his friend and close associate Morris.

CHAPTER 13

H. H. RICHARDSON AND McKIM, MEAD & WHITE

THE story of Shaw's career is a fascinating one, far more interesting in fact than the general history of English architecture in the last quarter of the nineteenth century. It was a success-drama in four or five acts, of which the last was by no means the least brilliant. Richardson's career was less eventful, even though, at its peak in the mid eighties, it was at least as successful as Shaw's. It was also incomplete, since death brought his production to an end at that peak when he was only forty-eight. Yet Richardson's achievement must be considered greater than Shaw's, qualitatively if not quantitatively, because his work was better integrated and his development more intelligently directed. Moreover, his influence operated on two levels: on one it was as wide, if more evanescent, than Shaw's – say, what Shaw's might have been if *he* had died at the age of forty-eight, that is, in 1879 – on another level it was more like that of Webb, affecting deeply several of the most creative American architects of the next two generations.

Henry Hobson Richardson was born in 1838 near New Orleans in Louisiana. Upon graduation from Harvard in 1858 Richardson, bilingual on account of his Louisiana birth, not unnaturally proceeded to Paris to the École des Beaux-Arts, entering there the atelier of L.-J. André (1819–90), a pupil of Lebas who had become a professor at the École in 1855. But after two years the outbreak of the Civil War in the United States cut off his remittances from home and he had to find work in order to maintain himself. His experience in the office of Théodore Labrouste, notably in working on the designs for the Asile d'Ivry outside Paris, was perhaps of more ultimate value to him than what he learned in André's atelier and at the École. Several of his earliest works in America, designed immediately after his return from Paris in 1865, have been discussed already (see Chapter 11). It was with the Brattle Square (now First Baptist) Church on Commonwealth Avenue at Clarendon Street in the new Back Bay residential district of Boston, the commission for which he won in a competition held in 1870, that his career seriously began. During the years that this was in construction, 1871–2, he had in his office a young assistant, Charles F. McKim (1847–1909), who had returned from Paris at the outbreak of the Franco-Prussian War in 1870. It may well be that the forceful McKim helped Richardson to crystallize the divergent elements evident in his earlier work into a coherent personal style. The Brattle Square Church somewhat resembles in its round-arched medievalism such a Paris church of the sixties as Vaudremer's Saint-Pierre-de-Montrouge, which Richardson himself may have seen and admired in the early stages of its construction. But the squarish T-shaped plan, without aisles but with transepts, would have been as unusual in France at this period as in England. The material is the richly textured Roxbury Puddingstone rising in broad plain surfaces to the medium-pitched gables. The detail strikes a sort of balance between the French Romanesquoid and the English High Victorian Gothic, the forms being more French, the execution more

English. The varied polychromy of the deep voussoirs of the arches is certainly English, but with a personal note in the irregularity of the coloured banding. The corner placing of the tall tower, with its fine frieze by the French sculptor Bartholdi, is English in spirit, but its shape is rather more campanile-like than any English church tower had been since the forties.

A similar stylistic crystallization can be seen in the very extensive plant of the State Hospital at Buffalo, N.Y., a commission also won by Richardson in competition in 1870. This was largely re-designed before construction began in 1872 and was in building throughout the whole decade. It was, functionally, the sort of commission for which Richardson's French training best prepared him, and the planning is French. The other sources of the design seem to have been mostly English, particularly the projects of Burges.

Two buildings in Springfield, Mass., where Richardson had been working on and off since his return from Paris, are more significant than the Buffalo institution for the rather definite evidence they offer as to his chief contemporary sources of inspiration at this point. The spire of the North Congregational Church there – commissioned as early as 1868, but built in 1872–3, and hence probably re-designed in 1872 – is a rather squat pyramid of quarry-faced brownstone with four corner spirelets rising from the same square base, clearly a simplified and personalized version of the spire that Burges designed for his Skelton church begun in 1871. The tower of the Hampden County Courthouse of 1871–3 also comes from Burges, in this case from the project that he entered in the London Law Courts competition of 1866. The general composition owes more to the slightly earlier English town halls at Northampton and Congleton by Godwin, who was also Burges's collaborator on the Law Courts project. But the magnificent scale of the random ashlar walls of quarry-faced Monson granite, their coldness relieved by bright red pointing, is as personal to Richardson as the similar brownstone masonry of the North Church and the Buffalo Hospital.

Richardson's American Express Building,[1] his first work in Chicago, which was begun in 1872, and his contemporary Andrews house in Newport, R.I., both showed comparable evidence of generic influence from contemporary England (see Chapters 14 and 15). In this same year, 1872, Richardson won the competition for Trinity Church[2] in Boston, which was to occupy a conspicuous site on the east side of Copley Square, the principal open space in the new Back Bay district. Preceding by a year the Panic of 1873, which slowed building almost to a standstill, this commission and that for the Buffalo Hospital kept him busy through five lean years. As Trinity rose to completion over the years 1873–7, this big Boston church established Richardson's reputation as the new leader among American architects (Plate 108A). Even before Trinity was finished others were producing crude imitations of it; and over the next twenty years many prominent American churches, particularly in the Middle West, followed in some degree the paradigm that it provided.

Trinity is in plan an enlarged and modified version of the Brattle Square Church. A deep semicircular chancel provides a fourth arm, and a great square lantern rises over the crossing. The elaborate porch, so archaeologically Provençal Romanesque, was added

by Richardson's successors, Shepley, Rutan & Coolidge, in the nineties, as were also the tops of the western towers; the present decorations of the chancel are much later and by Charles D. Maginnis (1867–1955).

The materials of Trinity are pink Milford granite in quarry-faced random ashlar for the walling and the Longmeadow brownstone that he had first used on the Unity Church in Springfield for the profuse trim. The detail changed in character as the work proceeded; in the earliest portions executed it is heavy and crude, with the foliage carved in a naturalistic High Victorian Gothic vein. But the logic of the round arches that Richardson had been consistently using since he designed the Brattle Square Church in 1870 led him to study Révoil's *Architecture romane du midi de la France*,[3] and such a characteristic feature as the polychromy on the outside of the apse is specifically Auvergnat. Moreover, the executed lantern was rather closely based on that of the Old Cathedral of Salamanca in Spain – a model that Richardson's assistant Stanford White (1853–1906), who succeeded McKim in his employ in 1872, seems to have suggested.

Most contemporaries, supposing all worthy nineteenth-century architecture to be necessarily derivative from this or that style of the past, believed that Richardson had initiated a Romanesque Revival here. But Richardson remained really as responsive to contemporary English ideas as he had been earlier. For example, the curious double-curved wooden roof with kingpost trusses derives from published examples of similar roofs built or projected by Burges. Equally symptomatic of English influence is the use of stained glass by Morris and Burne-Jones in the north transept windows. That glass, however, is inferior in richness of tone to the small windows in the west front designed by the American artist John LaFarge. LaFarge was also responsible for the painted decoration on the walls and the roofs.

To take over Fuller & Laver's New York State Capitol at Albany when already partly built in the way that Richardson and Eidlitz – a foreign-born exponent of Romanesque of the earlier *Rundbogenstil* sort, it will be recalled – were asked to do in 1875 was a thankless job; but this call for Richardson's aid illustrates the rapidity with which his leadership was accepted nationally. More important, both historically and intrinsically, than what he was able to carry out in Albany – chiefly the Senate Chamber – were a second house that he built in Shepard Avenue in Newport, R.I., in 1874–6 and a building in Main Street in Hartford, Conn., of 1875–6 (see Chapters 14 and 15). The Sherman house is the first example of a Shavian manor successfully translated into American materials; the Cheney Block (now Brown–Thompson Store) is not Shavian at all, but very similar to the arcaded façades common in England since the late fifties (Plate 116A).

To the late seventies belong two remarkably fine buildings, still obviously related to slightly earlier English work, but more personal than either the Newport house or the Hartford commercial building. With the Winn Memorial Library in Woburn, Mass., of 1877–8 Richardson initiated a line of small-town public libraries that reached its climax in the Crane Library in Quincy, Mass., of 1880–3 (Plate 110). The high window-bands of the stack wings, a monumental stone version of Shaw's 'ribbon-windows', and the stone-mullioned 'window-walls' at the ends are more significant than the round stair-turrets and the cavernous entrance arches – Early Christian from

Syria [4] in origin, not Southern French Romanesque, it should be noted – that romanticize their generally compact massing. The highly functional planning is asymmetrical yet very carefully ordered, perhaps the one remaining trace of his Paris training.

In building Sever Hall, a classroom building for Harvard College in Cambridge, Mass., in 1878–80 Richardson turned away from rock-faced granite and brownstone, materials whose increasingly common use marked the extent of his influence on other architects, to the red brick of the nearby eighteenth-century buildings in the old Harvard Yard. He even imitated the plain oblong masses of these Georgian edifices under his great red-tiled hip-roof; but the front, with its deep Syrian arch and two tower-like rounded bays, and the rear, with a broader and shallower central bow, are wholly Richardsonian. There is a rather Shavian pediment over the centre of the front, however; while the moulded brick mullions of the banked windows and the very rich cut-brick panels of floral ornament seem to reflect current English work by Stevenson and by Godwin as well as by Shaw. Yet the whole has been amalgamated into a composition rather more orderly than anything the English 'Annites' had yet produced. At the same time Sever Hall is almost as vigorous and manly in scale as his contemporary libraries of granite and brownstone.

Two domestic buildings of 1880, one entirely shingled, the other of rough glacial boulders, are even more personal works; and both, particularly the former, represent the American domestic mode of this period now called the 'Shingle Style' (see Chapter 15). The John Bryant house in Cohasset, Mass., of 1880 first illustrated his emancipation from the direct Shavian imitation that had begun with the Sherman house and continued in several projects – probably mostly White's work in actual fact – that were prepared in the later seventies but never executed. Quite a series of later shingled houses by Richardson followed the Bryant house between 1881 and 1886 (Plate 124B).

The contemporary Ames Gate Lodge [5] in North Easton, Mass., has a sort of antediluvian power in the bold plasticity of its boulder-built walls – a theme exploited once before in Grace Church in Medford, Mass., of 1867 it will be recalled – as remote from the Romanesque as from the Queen Anne. A similarly absolute originality of a more gracious order can be seen in the Fenway Bridge of 1880–1 in Boston; its tawny seam-faced granite walls happily echo the easy naturalistic curves of the landscaping by his friend F. L. Olmsted (1822–1903),[6] of which it is a principal feature.

1881 saw the initiation of a more monumental building for Harvard, Austin Hall,[7] then the Law School, which was completed in 1883. Rich Auvergnat polychromy and a great deal of rather Byzantinesque carved ornament somewhat confuse the direct structural expressiveness of the thoroughly articulated masonry walls; as a result Austin Hall provided a multitude of decorative clichés for imitators to abuse. Much more modest and also much more significant was the station at Auburndale, Mass., also of 1881, built for the Boston & Albany Railroad. This was the first and the finest of a series of small suburban stations notable for the simplicity of their design and for the compositional skill with which the open elements, carried on sturdy but gracefully shaped wooden supports, were related to the solid masonry blocks of granite and brownstone beneath sweeping roofs of tile or slate. If Shaw was called on in the nineties to design the

interiors of an ocean liner for the White Star Line, Richardson had already provided in 1884 a railway carriage for the Boston & Albany. This was neither Romanesque nor Queen Anne in inspiration, but had domestically scaled interiors lined with small square oaken panels and no carved ornament of any sort.

Stations, libraries, and houses form the bulk of Richardson's production from 1882 until his death. But two much larger buildings, which he himself judged to be his master works, were also fortunately initiated, one in 1884 and the other in 1885, well before his last illness began, though both had to be finished by his successors Shepley, Rutan & Coolidge after his death. The Allegheny County Buildings [8] in Pittsburgh, Penna., consist of a vast quadrangular courthouse dominated by a very tall tower that rises in the centre of the front and a gaol across the street to the rear. Except for the courtyard walls, interesting for the variety and the openness of their ranges of granite arcading, the courthouse offers on the whole only a sort of summary of his talents; the detail, above all, is afflicted with an archaeological dryness that must be due to the increasing dependence of his assistants on published documents of medieval carving. The courthouse provided, however, the model for many large public buildings in the next few years. Among these, the City Hall in Minneapolis, Minn., begun by the local firm of Long & Kees in 1887, is not unworthy of comparison with the original, particularly as regards the tower. That of Toronto in Canada, built by E. J. Lennox in 1890–9, is less interesting but even more monumental; it also signalizes the supersession of English by American influence in Canadian architecture at this point, as does the almost equally Richardsonian Windsor Station in Montreal begun by the American architect Bruce Price in 1888.

The Pittsburgh Jail is a masterpiece of the most personal order, Piranesian in scale, nobly expressive of its gloomy purpose, and as superb an example of granite masonry as exists in the world (Plate 108B). It epitomizes Richardson's genius where the courthouse merely summarizes his talents.

Richardson's highest achievement, however, was in the field of private building not in that of the public monument. By a happy coincidence his ultimate masterpiece rose in Chicago where, at this very moment, technical advances in construction were being made that would soon bring to a climax the whole story of nineteenth-century commercial architecture (see Chapter 14). Chicago retains Richardson's last great masonry house, that of 1885–7 for J. J. Glessner, almost as perfect a domestic paradigm of granite construction as the Pittsburgh Jail. To her shame, however, Richardson's Marshall Field Wholesale Store, built during the same years, was torn down a generation ago to provide a car park.

The Field store occupied an entire block with a dignity and a grandeur no other commercial structure had ever attained before (Plate 116B). Internally it was of iron-skeleton construction; externally the arcaded masonry walls represented a development from those of the Cheney Building of ten years earlier (Plate 116A). Segmental arches covered the broad low openings in the massive ground storey, all built of great ashlar blocks of rock-faced red Missouri granite. The next three storeys, built of brownstone, were combined under a single range of broad arches, yet also articulated within these arched openings by stone mullions and transoms. Above this stage the rhythm doubled,

with the windows of the next two storeys joined vertically under narrower arches. The scale of the quarry-faced ashlar was graded down as the walls rose, quite as were the window sizes, and the non-supporting spandrels were filled with small square blocks. The full thickness of the bearing masonry walls was revealed at all the openings. Finally there came a trabeated attic of somewhat Schinkel-like character over which appeared almost the only carved detail on the building, a boldly crocketed cornice. That was 'Early French', i.e., of twelfth-century Gothic rather than Romanesque or Byzantine inspiration.

The result was a monument as bold and almost as Piranesian in its scale and its forcefulness as the Pittsburgh Jail; but the walls were also as open, as continuously fenestrated, as those of the court of the Pittsburgh Courthouse. The logical and expressive design of commercial buildings with walls of bearing masonry could hardly be carried further. But in the very year that the Field Store was finished Holabird & Roche, in designing the Tacoma Building, also in Chicago, first showed how the exterior of such edifices might express instead a newly developed sort of construction that allowed the internal metal skeleton to carry the external cladding of masonry (see Chapter 14).

In one last commercial building, much more obscurely located and built of far less sumptuous materials, which was started just before Richardson's death – it was only commissioned after his last illness had begun – he carried the logic of the design of the Field Store one step farther. It was almost as if he had already sensed, like Holabird & Roche, the implications of the Home Insurance Building in Chicago of 1883–5 by their former employer William Le Baron Jenney, in which the new sort of construction was first used but not at all expressed. On Richardson's Ames Building in Harrison Avenue in Boston a tall arcade rises almost the full height of the wall beneath a machicolated attic; the depth of the reveals around the sash at the sides of the brick piers is minimized; and above the ground storey the spandrels are of metal panels set almost flush with both piers and sash.

When Richardson died in 1886 the evidence of his great late works indicates that his powers were at their highest. His office, moreover, had never been busier. How Richardson might have developed further it is impossible to say. In the hands of his imitators the Richardsonian mode did not grow in any very creative way during the decade or more that it continued a favourite for churches, public buildings, and even houses built of masonry. Those who had been closest to Richardson when his style was maturing, McKim and White, rarely imitated him; even before his death, in fact, they had already set under way a reaction against the Richardsonian. Their buildings and not his provide the real American analogue to the later work of Shaw in England. Moreover, their leadership succeeded his in many professional circles from coast to coast almost before he was dead.

Leaving aside the modes inherited from the sixties, in any case transmuted almost beyond recognition by the early eighties if not yet entirely superseded, there were at the time of Richardson's death three main currents in American architecture as against the four or five more or less Shavian modes then popular in England. One was the Richardsonian.[9] This was practised with some success by various Boston firms such as Peabody

& Stearns and Van Brunt & Howe. It had been carried to Kansas City, Missouri, by Van Brunt, moreover, and it was being developed with some originality by other Middle Westerners such as George D. Mason (1856–1948) in Detroit, D. H. Burnham (1846–1912) and his partner J. W. Root (1850–91), H. I. Cobb (1859–1931) and his partner Frost, and several other firms in Chicago. The very able designer Harvey Ellis (1852–1904),[10] working for L. S. Buffington (1848?–1931) in Minneapolis, should also be mentioned. Another current was represented by the development leading towards the Chicago skyscrapers of the nineties, in Richardson's last years more in the hands of technicians than of architects (see Chapter 14).

The third, and for the next few years the most expansive, current was what can already be called the Academic Reaction. This was parallel to, yet already pushing well ahead of, Shaw's somewhat coy approach to a programmatic revival of eighteenth-century forms; and McKim, Mead & White were its acknowledged leaders.[11] During the years that White was working for Richardson he seems to have been devotedly Shavian. Certain unexecuted house projects from the Richardson office which White signed, done for the Cheney family of Manchester, Conn., the clients for Richardson's Cheney Block in Hartford, make this particularly evident. When White replaced Bigelow in the firm of McKim, Mead & Bigelow, on his return from the European trip that he took after leaving Richardson in 1878, he found McKim designing Shavian houses with a considerably less sure decorative touch than his own. The McKim, Mead & White country houses that followed, however, such as that for H. Victor Newcomb in Elberon, N.J., of 1880–1 (Plate 125A), that for Isaac Bell, Jr, in Newport, R.I., of 1881–2 (Plate 126), and that for Cyrus McCormick in Richfield Springs, N.Y., of the same years, represent in several ways a real advance over Richardson's Sherman house.[12] Such an advance is equally to be observed in various houses built around Boston in these years by W. R. Emerson (1833–1918) and by Arthur Little (1852–1925), the very earliest of which doubtless influenced Richardson when he designed the Bryant house (see Chapter 15).

For McKim, Mead & White's Tiffany house in New York of 1882–3, all of tawny 'Roman' brick with much moulded brick detail, the inspiration was largely Shavian also; only the rock-faced stone base and the broad low entrance arch were at all Richardsonian. In the New York house that they began the next year, however – really a group of houses arranged in a U around an open court across Madison Avenue from the rear of St Patrick's Cathedral – for the railway magnate Henry Villard an entirely different, even quite opposed, spirit appears (Plate 109B). The Villard houses, although on Villard's insistence still built of brownstone rather than of light-coloured limestone, are as much a High Renaissance Italian *palazzo* as anything Barry or his contemporaries on the Continent ever designed in the preceding sixty years. Reputedly Joseph M. Wells (1853–90), an assistant in the McKim, Mead & White office who later refused membership in the firm, was responsible for the decision to follow Roman models of around 1500, most notably the Cancelleria Palace, as that was known to him – he had never been abroad – through the plates of Letarouilly's *Édifices de Rome moderne*.

This type of design represented a conscious reaction against the Neo-Picturesque,

whether Richardsonian, Shavian, or *François I*, a return to formal order of the most drastic sort. It represented also a return to close archaeological imitation of a style from the past such as had ended in America, on the whole, with the decline of the Greek Revival a generation earlier. Curiously enough this turn was also something of a declaration of independence from Europe, since the American Academic Reaction as initiated in the design of the Villard houses seems to have had no contemporary sources abroad. However much Shaw's Queen Anne had, for about a decade, been moving towards an equivalent formality – of a more eighteenth-century sort – Shaw had neither gone as yet so far in this direction nor did he ever turn to the High Renaissance for his models. Continental parallels in the eighties are not hard to find in the work of such men as Balat in Belgium, Koch in Italy, and Wagner in Austria; but their current production was probably not known in the United States, whose foreign relations in architecture had always been largely restricted to England, France, and Germany.

This American return to order was at first more significant for its absolute aspect than for its archaeological bent. Although McKim, Mead & White used a Renaissance arcade at the base of their Goelet Building erected in Broadway at 20th Street in New York in 1885–6, the upper storeys of this modest skyscraper offer a very free, and at the same time a highly regularized, expression of the hive of offices behind, and even of the metal grid of the internal skeleton. Certain houses by McKim, Mead & White in New York of these years were even freer from the imitation of specific Italian precedents; while their Wm. G. Low house of as late as 1886–7, on the seashore south of Bristol, R.I., is a masterpiece of the 'Shingle Style' despite the tightness and formality of its plan (see Chapter 15). Carefully ordered under its single broad gable, which even subsumes the veranda at the southern end, the Low house is yet quite without reminiscent detail or, indeed, much of any detail at all (Plate 127). In a group of small houses at Tuxedo Park, not at all academic in their exterior treatment, Bruce Price (1845–1903) was re-organizing the open plan of the Americanized Queen Anne in a schematically symmetrical way at just this time also (Plate 125B; Figure 28).

The possibility of a revival of the American Colonial and Post-Colonial in all their successive phases from the medievalism of the seventeenth-century origins to what can be called the 'Carpenters' Adam' of 1800 had been in the air ever since the early seventies, when McKim had added a Neo-Colonial room to a real Colonial house in Newport, R.I. In the local Colonial architecture Americans found obvious parallels to the seventeenth- and eighteenth-century precedent that Shaw was exploiting in England.[13] The 'Shingle Style' employed various features and treatments – such as the all-over covering of shingles itself – that recall American work of the periods before 1800. But because of the continued strength of inherited Picturesque ideals there was no programmatic imitation of formal eighteenth-century house design before the mid eighties. Even such a highly orderly example as Little's Shingleside House at Swampscott, Mass., of 1880–1 was still quite unarchaeological. Interestingly enough, this seems to have been about the first up-to-date American house to be published in a foreign magazine [14] since the *Allgemeine Bauzeitung* in 1846 presented examples of Greek Revival terrace-houses in New York.

Following on the completion of the Bramantesque Villard houses in New York in

1885, McKim, Mead & White built in Newport, R.I., in 1885–6 the H. A. C. Taylor house, lately destroyed, which was as Neo-Georgian, in its American Colonial way, as the Fred White house Shaw began in London two years later. For this the American architects adopted the symmetrical Anglo-Palladian plan of the mid eighteenth century and capped the resultant rectangular mass with the special gable-over-hip roof of Colonial Newport. Elaborately embellished with Palladian windows and with much carved detail of a generically Georgian order, the Taylor house provided a popular new domestic paradigm that gradually superseded almost completely those of the 'Shingle Style'. From the Taylor house stems that mature Colonial Revival which was to last longer in the end in America than had the Greek Revival.

Down to the early nineties, however, McKim, Mead & White were rarely so programmatic in their Neo-Colonial work, and their principal public building of the late eighties, the Boston Public Library, was entirely Italianate (Plate 111). In 1887 they were commissioned to build this major monument on the west side of Copley Square. There it was to face the Trinity Church that had initiated the Richardsonian wave more than a decade earlier – a monument in whose designing, moreover, both McKim and White had actually participated. The Library as built in 1888–92 was a major challenge to the Richardsonian, at least as contemporaries then generally understood and employed what they thought was Richardson's mode. The contrast it offers to the church opposite is almost as great as to the prominent but low-grade High Victorian Gothic structures that flanked the new site to north and south, the New Old South Church by Cummings & Sears of the mid seventies, still standing across Boylston Street, and the contemporaneous Museum of Fine Arts by John H. Sturgis (?–1888) and Charles Brigham (?–1925) which long occupied the south side of the square.

Trinity is dark and rich in colour, a complex pile rising massively to its large central lantern. Moreover, it was flanked at the left on the Boylston Street side, where Richardson took Picturesque advantage of the corner cut off his site by Huntington Avenue, with an asymmetrically organized and domestically scaled parish house. The Library is light coloured and monochromatic, all of a smooth-cut Milford granite ashlar originally almost white and even today much lighter than the rock-faced pink Milford granite of Trinity. It is, moreover, a simple quadrangular mass, capped by a pantiled[15] hip-roof of moderate height; the scale throughout is monumental and the detail sparse but eminently suave. Yet if the contrast with Richardson's Trinity of 1873–7 is so great – and even greater with the ponderous vernacular Richardsonian as that was long illustrated south of the Library in the all-brownstone S. S. Pierce Store just built by S. Edwin Tobey in 1887 – the continuity with Richardson's work of the mid eighties is equally notable.

For example, none of Richardson's own late work was polychromatic. Three of his more prominent edifices, the Allegheny County Buildings in Pittsburgh and the Glessner and MacVeagh houses in Chicago, were all of light-coloured granite, while the Warder house in Washington is of smooth-cut limestone such as Wells had wished to use for the Villard houses. Above all, the quadrangular block of the Boston Library with its regular arcuated fenestration parallels rather closely the design of Richardson's just completed masterpiece, the Marshall Field Store. Thus, in fact, Richardson's former

assistants, for all the Renaissance precedent of their detailing – and the courtyard of tawny Roman brick is almost more Bramantesque in treatment than the Villard houses – were to a very notable extent only proceeding farther in a direction that he himself had already taken.

Since most contemporaries, in their innocence, thought the Richardsonian merely a Romanesque Revival, it is understandable that they saw in such things as the Villard houses and the Boston Public Library an alternative – and anti-Richardsonian – Renaissance Revival. Nor can it be denied that the handling of the exterior of the Library derives from the sides of Alberti's Tempio Malatestiano in Rimini almost as directly as the arcade in the court is copied from that of the Cancelleria Palace in Rome.[16]

The stair-hall, the reading-room, and even the minor corridors reveal clearly their Letarouillian origins when they are studied in the architects' drawings, drawings which imitate the very style of draughtsmanship of Letarouilly's plates. The stair-hall, executed in yellow Siena marble, has walls decorated allegorically by the French painter Puvis de Chavannes, generally considered the greatest muralist of the age; the delivery room has an entirely different sort of illustrative Shakespearean frieze painted by Edwin A. Abbey; the hall in the top storey contains John Singer Sargent's most ambitious murals. The associated sculpture by Augustus St Gaudens and others is less interesting; but these notable decorative increments from the hands of painters and sculptors of considerable reputation help to explain why for a generation this building was thought to have initiated a real 'American Renaissance' in which all the arts participated. Of this 'Renaissance' an international exhibition represented the moment of early triumph.

When, in 1891, it was decided to hold in Chicago the first American international exhibition in recognition of the 400th anniversary of the discovery of America by Columbus, the initial architectural responsibility lay with the Chicago firm of Burnham & Root. They were working at that very moment on two of the most remarkable of early Chicago skyscrapers, the Reliance Building (Plate 115B) begun in 1890, which offered the most advanced expression of the new all-skeleton construction, and the Monadnock Building begun the next year, which was the last very tall building to have exterior walls of bearing masonry (see Chapter 14). The more representational Chicago skyscrapers of this period by Burnham & Root, the Women's Temple and the Masonic Building, were of generically Richardsonian character; and Richardsonian influence was never stronger and more general in Chicago than in the five years following his death. But the principal buildings of the World's Columbian Exposition,[17] as they rose in 1892–3, proved to be neither Richardsonian nor at all expressive of metal construction in the way of those at the Paris Exhibitions of 1878 and 1889 (see Chapter 16).

Burnham in 1891 called in various leading Eastern architects to assist him in designing the World's Fair, as the Chicago exhibition was usually called. Then in that same year his partner Root, the designer of the pair, died. So it came about that the Easterners, not so much the ageing Hunt, dean of the profession, as the energetic and executive McKim, called the tune; McKim even provided Burnham with a new designer in the person of Charles B. Atwood (1849–95) to replace Root. The Fair, with the landscape architect Olmsted to collaborate on the planning, came out a great 'White City', the most com-

plete new urbanistic concept [18] to be realized since the replanning of Paris and of Vienna in the third quarter of the century (Figure 20).

The metal-and-glass construction of the regular ranges of vast exhibition buildings was almost entirely hidden by the elaborately columniated façades of white plaster that were reflected, dream-like, in Olmsted's formal lagoons. The architects' inspiration was generically academic, not specifically Italianate or Classical, and only one or two small State pavilions followed Colonial Revival models. The dominant scale was very large indeed, and the façades of the various buildings, although by many different architects

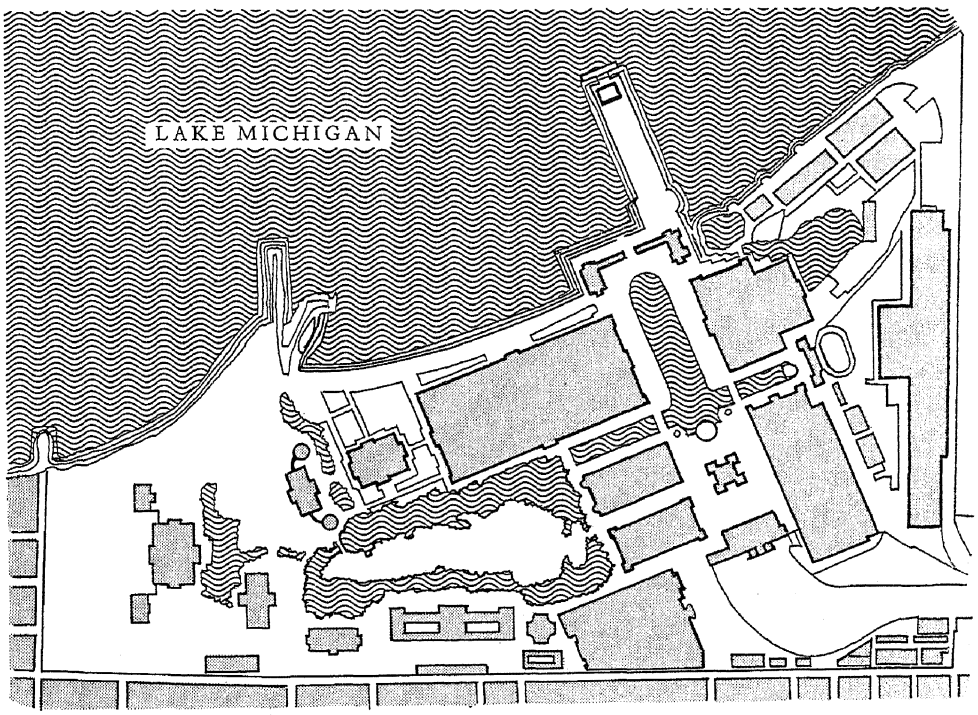


Figure 20. D. H. Burnham and F. L. Olmsted: Chicago, World's Fair, 1893, plan

both Eastern and Western, were surprisingly harmonious. The young men back from the École in Paris must have worked overtime to bring up to McKim's increasingly academic standards the projects of various well-established architects who had been doing more or less Richardsonian work for the last decade.

Despite the major importance of the Shavian influence in America around 1880, after the designing of the Villard houses in 1883 American architects moved far more rapidly than Shaw himself along the path towards abstract order and stylistic discipline. The H. A. C. Taylor house introduced, in an American version, the formal eighteenth-century revival – whether one calls it 'Monumental Queen Anne' or 'Neo-Georgian' – before Shaw began his house for Fred White. It is even perhaps significant that this was done for an American client. The World's Fair of the early nineties brought to the fore a more monumental and ordered sort of Neo-Academicism than Shaw ever reached. By the standards of the next generation, for example, Atwood's Fine Arts Building at Chicago

(Plate 109A), though based on a Prix de Rome project of 1857, was more advanced than Shaw's Piccadilly Hotel of 1905–8 (Plate 107). The Paris Exhibition of 1889 was notable for its great feats of metal construction, Eiffel's Tower (Plate 130A) and Contamin's Galerie des Machines (see Chapter 16). But the façades of the Grand Palais built for the Paris Exhibition of 1900, executed permanently in stone, seem merely a solider realization of the plaster 'dream-city' that Burnham and McKim had conjured up on the Chicago lake-front earlier in the decade.

Whether or not there was really influence from Chicago on Paris in the late nineties, there can be no question that the influence of the Fair in America was very great indeed. While the buildings of the Fair were rising in 1892 the young Frank Lloyd Wright (b. 1867) built his Blossom house in Chicago in obvious emulation of McKim, Mead & White's Taylor house (see Chapter 15). The following year he submitted in competition a completely academic project for a Museum and Library in Milwaukee. Moreover, this project, based on Perrault's east front of the Louvre, was more suave in its academicism than the buildings that Richardson's successors, Shepley, Rutan & Coolidge, who had already gone over like almost everyone else to the McKim camp, were erecting that year for the Chicago Public Library and for the Chicago Art Institute on Michigan Avenue.

It is the great historical paradox of this period in Chicago that at the very time the academic triumph of the Fair was being prepared, nineteenth-century commercial architecture was also reaching its climax there. Even before Richardson died, his tradition had split in the mid eighties. One side of it, that related to his own French training and his dependence on various styles of the past, limited though that was, as also his growing concern with architectonic order, went forward under the leadership of McKim (see Chapter 24). The other side, derived from his sense of materials, at once intelligent and intuitive, and his interest in functional expression – the qualities that were most notable in his shingled houses and his commercial buildings – provided the platform from which first Sullivan and then Wright in the late eighties and the nineties advanced to the creation of the first modern architecture (see Chapters 14 and 15).

If the importance of Richardson and, indeed, that of Shaw – as regards the development of domestic architecture – are to be fully appreciated the stories of the general development of the commercial building and of the dwelling-house in England and America down to 1900 must be known. Of the two, that of commercial architecture is the simpler and also the more dramatic. The culmination of this story in the American skyscrapers of the nineties has been recognized, from the time when so many foreign visitors came to Chicago in 1893 on account of the Fair, as one of the major and most characteristic architectural achievements of the whole period with which this volume deals.

CHAPTER 14

THE RISE OF COMMERCIAL ARCHITECTURE IN ENGLAND AND AMERICA

THE line of technical development which runs from the cast-iron-framed textile mills of the 1790s in England to the steel-framed skyscrapers of the 1890s in America seems to posterity a simple and obvious one. But, in fact, various lags and cul-de-sacs make the story long and complex. The most significant technical advances in iron construction of the first half of the century were not in the commercial field, and the account in this chapter is by no means merely a repetition and a continuation of the story of iron construction down to 1855 that has been provided earlier (see Chapter 7).

The great difference between the Benyon, Bage & Marshall Mill of 1796 at Ditherington, which initiated metal-skeleton structure, and Sullivan's Guaranty Building in Buffalo, N.Y., of a century later is that the English mill is purely and simply a technical feat of construction quite without architectural pretension. If not literally anonymous, the mill was certainly the work of a millwright rather than an architect; the skyscraper, on the other hand, is a prime architectural monument of the long period of a century and a half that this book covers, and the masterpiece of one of the greatest and most creatively original designers that the nineteenth and twentieth centuries have produced (Plate 119). But the skyscrapers of the 1890s do represent also the culmination of developments in the field of construction that began with the English mills of the 1790s, even if those developments are far from being the whole story of nineteenth-century commercial architecture. How office buildings were gradually received into the realm of architecture and, by the end of the nineteenth century, had risen so high in that realm that few productions of the 1890s in other fields of building can compare in quality of design with the great early skyscrapers is perhaps more significant for western culture in general than the purely technical aspect of the story. The weaving together of these two strands makes the full story one of the most interesting and complex in the history of nineteenth-century architecture.

Nineteenth-century commercial building need not be very precisely defined. It includes several slightly different sorts of edifices suitable for the needs of business, all consisting of a succession of identical upper storeys subdivided into offices or store-rooms, with or without shops or representational premises below. Highly specialized and very lucrative concerns such as banks and insurance companies, to whom prestige of various sorts increasingly appeared a major desideratum, were the first to seek dignity and architectural display by employing architects of established reputation. Such agencies also desired buildings that were fire-resistant quite as much as did contemporary millowners. Already in Soane's earliest work at the Bank of England he emulated, as has been noted, certain French technical advances that had just been employed by Louis in the Théâtre Français in Paris before these advances were first adopted in an English

textile mill (see Chapters 1 and 7). Along Regent Street, around 1820, Nash and others housed less pretentious types of business in structures of mixed character and of less completely fireproof construction. But the premises on the ground floor here generally required very wide shop-windows of the sort that the use of iron supports made possible, even though the upper storeys were still nearly identical with those of domestic terraces.

In Boston in the mid twenties Parris was designing for the streets flanking his Market Hall commercial façades of a much more novel character, using not iron but granite in monolithic posts and lintels to provide a masonry skeleton filled with wide and close-set windows in all the storeys (Plate 112B).[1] In later Boston work of the next two decades in this tradition architects such as Isaiah Rogers and various builders employed iron for internal supports and sometimes also on the exterior at ground-floor level. But the granite 'skeleton' front preceded the skeletonized all cast-iron front in America by precisely a quarter of a century.

In England in the forties complete internal skeletons of iron carrying jack arches of brick or tile, hitherto used chiefly in textile mills, were increasingly adopted for superior commercial work, but the characteristic exteriors of commercial buildings[2] remained entirely of bearing masonry construction. However, in one case at least, a small block at 50 Watling Street in London which was probably built before 1844, the iron comes through to the outer surface in the continuous window-bands of the upper storeys, even though the corner piers and the sections of wall between the storeys are of solid brickwork.

From C. R. Cockerell, titular Architect of the Bank of England after Soane's retirement in 1833, and other architects such as Hopper, banks and insurance companies in London and other large cities obtained in the thirties and forties distinguished buildings all of masonry. In one especially fine edifice, erected in 1849–50 purely for use as offices, Bank Chambers behind Cockerell's monumental Branch Bank of England of 1845–8, in Cook Street in Liverpool, he closely approached the directness of trabeated masonry expression of the contemporary Boston architects and builders (Plate 112A). The fireproof construction is of vaulted masonry throughout, moreover, with iron used only for the skylights over the stair-wells.

For the general character of commercial architecture down to the late fifties, however, A. & G. Williams's Brunswick Buildings of 1841–2, also in Liverpool, were more significant. In this very large quadrangular block of general offices they followed the *palazzo* model provided by Barry's newly completed Reform Club almost as closely as George Alexander had already done in his Bath Savings Bank the year before. The *palazzo* mode soon became the favourite one for imposing commercial architecture in Britain and, before long, in the United States as well.[3] With its regular rows of good-sized windows and its special prestige of having housed a commercial aristocracy in Renaissance times, this had certain aspects of suitability, both real and symbolical, to the needs of business-men. It also had serious disadvantages which soon led to a gradual modulation away from the original paradigm.

The wide spacing of the windows demanded by correct *palazzo* precedent was

awkward for offices requiring that maximum of natural light which was so readily provided by Parris and others in their granite buildings in Boston and by the unknown designer of 50 Watling Street in London. Therefore windows were soon much enlarged and also set closer together. Sometimes, moreover, as in a large cotton warehouse built in Parker Street in Manchester in 1850 by J. E. Gregan (1813–55), the increasingly heavy frames were applied only to every other opening. Properly, such 'palaces' ought not to be more than three storeys high, but the rapidly rising value of good sites in urban business districts made it even more desirable to carry office buildings to four and five storeys like the terrace houses of the period.

Already in the Sun Assurance Offices in Threadneedle Street in the City of London, designed in 1839 and built in 1841–2, which do not in fact conform at all closely to the standard *palazzo* formula, Cockerell not only opened the ground floor with an arcade of haunched-segmental arches but also linked his two topmost floors behind an engaged colonnade in order to reduce the apparent height of the façade to three storeys. Across the street in the Royal Exchange Buildings of 1844–5 Edward I'Anson (1812–88) in 1844–5 lifted his whole palace front above a tall glazed arcade and tied the top-storey windows into a sort of frieze as Barry had already done in the second storey of the Reform Club (Plate 35B). In Manchester I'Anson's cousin Edward Walters (1808–72) in the Silas Schwabe Building of 1845 at 41 Mosley Street linked the windows of the first and second storeys by an applied arcade.

The building with an exterior entirely of cast iron that James Bogardus (1800–74) designed and built for his own use in New York of 1848–50 was well publicized at the time,[4] and is still famous although long since demolished. On the corner of Washington and Murray Streets in New York another Bogardus building, the Laing stores erected in two months in 1849, is still extant (Plate 67B). Although there was never any such general use of cast-iron fronts in Great Britain as in America in the fifties and sixties, it seems probable from contemporary evidence that some architect, probably Owen Jones, built one at 76 Oxford Street in London a year or so before 1851. However that may be, an ironfounder named McConnel provided the structural elements for an office building[5] in Jamaica Street, Glasgow, in 1855 with an exterior all of cast iron that still stands. A curious feature of the design of this structure is the delicate iron membering that forms a series of arcades between the major structural piers. This decorative device, structurally meaningless in iron except for bracing although employed by Paxton at the Crystal Palace, is probably an imitation of the masonry arcading that was, in the mid fifties, gradually modifying the earlier *palazzo* paradigm quite beyond recognition.

In 1849 Wild used two ranges of Italian Gothic arcades on his St Martin's Northern Schools in London, and the perspicacious Street remarked in an article on the obvious suitability of the theme for commercial fronts, as has already been noted. In Manchester in 1851 Starkey & Cuffley in a pair of shops employed ranges of three arches on each of the two fronts in the four storeys, binding them in with coupled columns marking the ends of the party walls.

The lifting of the window tax in 1851 encouraged great increases in window area. In jubilant recognition of this H. R. Abraham the next year made all his windows triplets

in the first and second storeys of the W. H. Smith Building at 188–192 Strand in London, but without using any arches at all. Two years later, however, in a building for Heal's furniture store in Tottenham Court Road in London, James Lockyer (?–1875) carried a *quattrocento* arcade all across the first storey.

By this time architects and public alike had become aware of a different High Renaissance formula from Barry's (see Chapter 4). Beside the Reform Club in Pall Mall Sydney Smirke's new front of the Carlton Club, designed in 1847, was coming to belated completion in the mid fifties. Moreover, its Sansovinesque arcades were already echoed in the first storey of Parnell & Smith's Army and Navy Club of 1848–51 across the way. These London models were closely followed by William B. Gingell (1819–1900) in his West of England Bank in Corn Street, Bristol, of 1854 and quite outranked by the great Venetian *palazzo* that David Rhind (?–1883) erected in 1855 in Prince's Street in Edinburgh for the Life Association of Scotland.

Possibly the fine warehouse at 12 Temple Street in Bristol with three groups of triplet arches in each of the upper storeys is by Gingell and of this date. There is none of the Sansovinesque lushness of his bank here, but the fine workmanship of the quarry-faced Pennant stone walls laid up in random ashlar, with smooth-cut Bath stone trim and coloured voussoirs banding the arches, bears some resemblance to the Bristol General Hospital he was building in 1853–7, notably in the very bold rustication of the ground-storey arches.

However that may be, two London buildings of 1855 advanced nearly as far towards the all-arcaded front. Hodgson's Building by Knowles in the Strand at the corner of Chancery Lane has the general character of a *palazzo*, but all the windows are arched, as in buildings of the *Rundbogenstil*; moreover their trim sinks into the wall rather than projecting from it, so that the wall sections between are reduced visually to mere piers, even though they have no imposts. The Crown Life Office, in New Bridge Street, Blackfriars, was built in 1855–7 by Ruskin's friends Deane & Woodward, with whom he was most closely associated precisely in those years. The round-arched medieval arcading of this façade, with the piers hardly narrower than on Knowles's building yet articulated by bases and imposts, may surely claim Ruskinian sanction. Here, at any rate, was the first important contact between advanced High Victorian Gothic and the commercial world, a contact destined to be very fruitful over the next fifteen years or so. Henceforth even architects of no aesthetic pretension were ready to exploit arcading.

The English development of arcaded masonry façades can be closely matched in America, specifically in Philadelphia.[6] There S. D. Button (1803–97), Napoleon Le Brun (1821–1901), and others in buildings of 1852–3 in Chestnut Street – that at 239–241 by Button is still extant – consistently used arched openings between slim piers; and Notman in 1855 provided for the Jackson Building at 418 Arch Street a façade even more completely articulated by arcading in all its four floors than the Crown Life Office. By this time, moreover, the trabeated design of Bogardus's first iron fronts had likewise given way to ornate arcading in emulation of masonry fronts.[7]

Iron remained behind the scenes in most of the English arcaded buildings. In Waterhouse's Fryer & Binyon Warehouse in Manchester of 1856, however, whose upper walls

had the polychrome diapering of the Doge's Palace so much admired by Ruskin, the first storey was opened up by an arcade carried on coupled iron columns. In the Wellington Williams Warehouse of 1858 in Little Britain in London, the obscure City firm of J. Young & Son used arcades in all the five storeys with iron columns to support the outer orders; thus the width of the piers could be considerably reduced, and the effect of over-all articulation was as much enhanced as in the Philadelphia buildings.

Deane & Woodward's very Ruskinian project of 1857 for the new Government Offices, with its endless Italianate arcading, and a small warehouse in Merchant Street in Bristol of the next year by Godwin gave some impetus to the use of pointed instead of round arches. But on the whole the best designed among the innumerable arcaded façades in England retained the rounded form, however Gothic their other detailing may be. In one of the largest and finest examples of the early sixties, moreover, Kassapian's Warehouse in Leeds Road, Bradford, perhaps by Lockwood & Mawson, the detailing is academically Roman (Plate 114B).

Different as they are, this Bradford façade and that of Godwin's contemporary warehouse at 104 Stokes Croft in Bristol, so much more subtly Ruskinian than anything by Deane & Woodward, are the two masterpieces of the genre at its best moment (Plate 113). Of very high quality also is 60 Mark Lane in the City of London built by George Aitchison in 1864–5. There the existence of a complete iron skeleton, presumably but not certainly present in most of the other examples, is fully documented. Moreover, on the rear the metal comes through to the outer face of the wall much as it does at 50 Watling Street, built some twenty years earlier.

In Philadelphia William Johnston had begun in 1849 the seven-storey Jayne Building in Chestnut Street,[8] introducing a new vertical formula of design for commercial façades. Above a conventional ground floor, narrow granite piers in the forms of clustered colonnettes rise the full height of the building, merging into Venetian Gothic tracery below a terminal parapet. Whether or not Samuel K. Hoxie, the contractor who provided the Quincy granite for this and other Philadelphia buildings, was familiar with the 'granite-skeleton' work of Parris, Rogers, and others in Boston is not clear. But in the next few years a good many façades with a similarly vertical and 'skeletonized' treatment were built in Philadelphia by J. C. Hoxie and his sometime partner Button. That across the street from the Jayne Building has already been mentioned, since the openings between the piers are covered with segmental arches throughout. Button's building at 723–727 Chestnut Street of 1853 and his extant Leland Building at 37–39 South Third Street are even more 'proto-Sullivanian', so to put it. Louis Sullivan probably saw and admired such things as the Jayne Building and the Leland Building when he was working for Frank Furness in Philadelphia in the seventies; certainly they are very premonitory of his characteristic work of the eighties and even the nineties.

Various other ways of reducing the wall to little more than a masonry cladding of the iron structural members were also in use in England as well as in America by this time. A notable small edifice in the City of London, of uncertain date and authorship but probably by Thomas Hague and of 1855, is at 22 Finch Lane, with another front to the court at the side. On both these façades the two lower storeys are joined together

visually by setting back the horizontal spandrel between them, and the moulded stonework of the very narrow piers is of almost metallic scale and crispness.

Still more striking is Oriel Chambers [9] in Water Street in Liverpool, built in 1864–5 by Peter Ellis (fl. 1835–84), and another smaller building by him at 16 Cook Street of a year or two later. On the front façades of these the masonry is scaled down quite as much as at 22 Finch Lane but given a more decorative treatment, in both cases of rather metallic character. At Oriel Chambers, oriels of plate glass held in delicate metal frames are cantilevered out in every bay of all the upper storeys, producing a regular rhythm broken only by the clumsy cresting on the top (Plate 114A). At 16 Cook Street all the stone spandrels are set back, thus emphasizing even more strongly than at Oriel Chambers the continuous vertical lines of the mullions. The over-all pattern is once more somewhat confused, however, by the arches across the top that link the mullions together. The rear walls of both of Ellis's buildings are even more open in design and quite directly expressive of the internal metal skeleton. Towards the narrow court at the side of Oriel Chambers only every third iron pier is clad with masonry; those between rise free behind the glass of the horizontally sashed windows whose upper planes are slanted inward to catch the maximum of light.

If in some technical respects the Chicago skyscraper of the nineties seems almost to have come to premature birth in Liverpool in the sixties, as in some other respects it had done in the Philadelphia commercial buildings of the fifties, the immediate influence of these buildings by Ellis seems to have been almost nil. Eventually Owen Jones, in a façade at Derby of 1872, and Thomas Ambler, in a corner building at 46–47 Boar Lane in Leeds of 1873, did come to use only iron and glass, omitting all masonry; but more characteristic commercial work of these years is to be seen in such warehouses by unknown hands as the one at 1–2 York Place in Leeds, with an arcade crisply detailed in moulded brick rising through all the upper storeys, somewhat as on the Philadelphia buildings of the fifties, or a larger example in Strait Street in Bristol, with a much heavier arcade subsuming several upper storeys, handsomely executed in stones of different colours and textures and very boldly and simply detailed. Such things, however, very soon seemed to the English not advanced but retardataire as contemporary attention focused on the Queen Anne of Shaw's New Zealand Chambers of 1872–3.

Richardson's very un-Shavian American Express Building [10] in Chicago of 1872–3 first brings that Mid-Western metropolis into this story. That had no arcading, but the windows were very closely set, sometimes (it would appear) with only light metal colonnettes as mullions between them. There was also a directness and a 'realism' of treatment throughout comparable to that of Richardson's more monumental work of this date, notably the Hampden County Courthouse and the Buffalo State Hospital, both designed the previous year and at this time still in construction. But Richardson's dependence on English commercial work of the preceding fifteen years became closer still in his first really fine business building, the Cheney Block (now the Brown-Thompson Department Store) built in Hartford, Conn., in 1875–6 (Plate 116A). Here the wide ground-storey arcade, including a mezzanine, and the narrower arcade above, subsuming several storeys – as on the very proto-Richardsonian warehouse in Strait Street in Bristol – are

carried out with typically Richardsonian stoniness in quarry-faced brownstone. But the banded arches introduce a bold note of High Victorian Gothic polychromy, and the carved detail is in the harsh but richly naturalistic vein – also High Victorian Gothic in spirit – of the ornament on the earliest executed portions of Trinity Church in Boston, probably of a year or two before.

Already, in New York, the skyscraper [11] had been born by this date, and leadership in commercial architecture had crossed the Atlantic for good and all. None of the structures dealt with so far in this chapter except the Jayne Building were more than five or six storeys high, since it could not be expected that business clients would climb more than four or five flights of stairs. But the average height of buildings in the financial districts of cities had, even so, almost doubled since the eighteenth century, partly because of the general rise in the number of storeys, partly because of much increased storey heights. Vertical transportation of human beings, which would allow the erection of office buildings considerably more than five storeys high – industrial buildings were often much taller already – became increasingly feasible during the forties and fifties. Hoists for goods were a commonplace of English warehouse design after 1840, and in 1844 the Bunker Hill Monument had a passenger-hoist operated by a steam engine. In New York the Haughwout Store on Broadway had in 1857 the first practical passenger lift or elevator to be installed in an ordinary urban structure. This was of the type developed by Elisha G. Otis. A lift of another sort was introduced in the Fifth Avenue Hotel in New York later that year. Those of 1860 in the Westminster Palace Hotel in London apparently did not function, at least for some years. The Equitable Building, for which Arthur Gilman and Edward Kimball, with George B. Post (1837–1913) as the associated engineer, won the competition in 1868, was the first office building in New York to have a lift from the time of its completion in 1871. Immediately after this lifts were introduced in several other comparable structures, and one- or two-storey mansards were often added to the tops of existing buildings. A great change was thus at hand in New York in the early seventies.

Despite the Panic of 1873, the mid seventies saw the construction of what may properly be considered the first skyscrapers, the nine-storey (260-foot) Tribune Building and the ten-storey (230-foot) Western Union Building. Both were therefore about double the height even of the tallest office structures, such as the five-storey (130-foot) Equitable Building erected during the preceding boom period. These first skyscrapers rose to altitudes reached hitherto in America only by church spires, as general views of the New York skyline around 1875 make evident. Neither Hunt's New York Tribune Building, extant but since carried many storeys higher, nor Post's Western Union Telegraph Building, long since demolished, incorporated any other technical innovations; [12] nor was their design at all closely related, like that of Richardson's Cheney Block in Hartford, to the advanced English commercial work of the previous decade. Paradoxically, the French-trained Hunt's building is somewhat the more English of the two in character; but, for all the direct expressiveness of the window grouping in triplets in each bay, the detail throughout is coarse and gawky, and the silhouette of the very tall mansard and the asymmetrically placed tower was from the first overbearing. The

later addition of many more storeys has made the building even more top-heavy in appearance. The Tribune Building was of interest chiefly for its relatively great height, now unnoticeable among the much taller skyscrapers built around it later. Its almost complete avoidance of any sort of archaeological styling, however, such as the Romanesquoid of Richardson's Cheney Block or the violently polychromatic and spiky Gothic of Hunt's own Divinity School at Yale, on which construction was still at this date proceeding, is certainly worth remark also.

The Western Union Building of Post was only nominally French, for its rather heavy-handed Second Empire treatment owed more to earlier English and American designs in this mode than to anything Parisian (Plate 115A). But the exterior was more orderly, if less expressive, than that of Hunt's skyscraper and the mansards on top piled up as grandly to the centrally placed tower as on Mullet's contemporary Post Office near by. Yet stylistically both Post's and Hunt's buildings were out of date almost as soon as they were finished; and after the hiatus caused by the depression of the seventies the locus of the skyscraper story moved westward to Chicago.

Chicago, already the metropolis of the Middle West, had almost no architectural traditions at this time. First developed as a city in the thirties, the need for rapid building in timber had led to the invention or development of what is called 'balloon-frame' construction,[13] in which relatively light studs or scantlings, rising wall high, form a cage or crate whose members are fastened together by a liberal use of machine-made nails. Balloon-frame construction, thus, is a typical offshoot of the industrial revolution, becoming feasible only with the mechanization of the saw-mill and of the manufacture of nails. Theoretically, there might be thought to be some analogy between this New World method of carpentry, so different from the heavy framing of the Old World, hitherto always used in America as well, and metal construction. There is no evidence, however, that Chicago took to iron with any greater enthusiasm in the fifties and sixties than did New York or various other cities; indeed, St Louis seems to have had more and finer examples of cast-iron fronts, particularly in the early seventies. As late as that, moreover, the cities of the American Northwest were obtaining their cast-iron fronts prefabricated from Britain, just as San Francisco had obtained many of her warehouses and immigrant dwellings in 1849–50.

At the opening of the seventies a terrific conflagration [14] all but wiped out Chicago. The need for rapid rebuilding drew thither ambitious architects and engineers from all over the East, but the immediate results of their activities were anything but edifying. Architectural leadership was still centred in Boston and New York; in any case, that leadership had rarely been more confused than in the early seventies when even Richardson was only just maturing his personal style. Richardson's own Chicago building for the American Express Company was doubtless too indeterminate in character to attract a local following; nor did he build again in Chicago until the mid eighties, by which time various versions of the Richardsonian were already reaching Chicago at second or third hand.

If the Chicago architectural scene had any virtues around 1880 they were largely negative ones: no established traditions, no real professional leaders, and ignorance of

all architectural styles past or present. Among the architects who had settled in Chicago in the seventies was a Dane, Dankmar Adler (1844–1900). Into his office in 1879, first as chief draughtsman but soon as partner, came the young Bostonian Louis Sullivan. As has been noted before, Sullivan had been trained first in Ware's school at the Massachusetts Institute of Technology and later, until he revolted against its rigid doctrines, at the École des Beaux-Arts in Paris. Having worked for Frank Furness, wildest of American High Victorians, Sullivan picked Chicago not alone for its evident professional opportunities but even more because he liked the idea of working where there were no hampering traditions.

The earliest building of any consequence designed by Sullivan, the Rothschild Store in Chicago of 1880–1, seems at first sight a turgid compilation of barbarisms. Examined more closely, however, and compared with the Leiter Building on its right, which was built two years earlier by the engineer-architect William Le Baron Jenney (1832–1907), the two sorts of originality that Sullivan essayed here can be readily recognized. On the one hand there is the ornament,[15] undefinable in historic terms yet with a kind of similarity – almost certainly accidental – to the Anglo-Japanese detail of Nesfield and Godwin. At this stage in Sullivan's career the originality of his ornament must be remarked but can hardly be admired. Below his elaborate ornamental cresting, on the other hand, Sullivan handled the main architectonic elements of his façade with both real originality and most admirable logic. Although the building is not tall – no skyscraper, that is, even by the modest standards of 1880 – Sullivan did not hesitate to follow the lead of the Philadelphia commercial architects of the fifties in emphasizing the vertical. This he accomplished by continuing the mullions that subdivide his bays across the spandrels, somewhat as Ellis had done fifteen years before in his buildings in Liverpool, rather than by using a multiplicity of masonry piers.

Sullivan's next Chicago building, the Revell Store erected for Martin Ryerson in 1881–3, continued the theme of the Rothschild Store, but extended it over a much larger corner block with considerable chastening of the ornamental treatment at the top. The Troescher Building of 1884, which came next in sequence, is very much finer. Widely-spaced piers of plain brickwork rise the full height of the façade above a slightly Richardsonian ground-storey arcade of rock-faced stone; between them there are no oriels, as on Ellis's Oriel Chambers or his Ryerson Building [16] of the previous year, but broad horizontal windows separated by recessed spandrels. These spandrels are rather like Ellis's on his other building at 16 Cook Street, but their actual prototypes are to be found, more probably, in Philadelphia buildings by Button such as the one at 723–727 Chestnut Street. The ornament here, now still further chastened, is largely confined to these spandrels. The curved cresting across the top, however, recalls a little the turgid crown of the Rothschild façade.

Sullivan's early buildings were not very tall, and they did not advance the technical development of the skyscraper. In these same years, however, other Chicago architects were doing so to notable effect. For the ten-storey Montauk Block of 1882–3, tall, but no taller than the first New York skyscrapers of ten years before, Burnham & Root introduced spread foundations to carry its great weight on the muddy Chicago soil,

out of which earlier buildings had, literally, to be hoisted every few years. In design they were content, however, with a range of ten almost identical storeys of plain brick pierced by regularly spaced segmental-arched windows. Obvious as this treatment may seem, it took courage to use it at a time when most architects were still trying to disguise the embarrassing height of buildings only half as tall by grouping their storeys together in twos and threes.

The Home Life Insurance Building begun in 1883 was also only ten storeys tall.[17] But in building it Jenney invented, or at least introduced in Chicago, what is specifically called 'skyscraper construction', that is a method of carrying the external masonry cladding on metal shelves bolted to the internal skeleton. Jenney, however, probably thought he was merely tying together his metal skeleton and his brickwork, not carrying the latter entirely, though this was found to be the case when the structure of the building was carefully examined during its demolition. The Home Insurance Building, in any case, looked far more as if its external walls were bearing than do any of Sullivan's early works. Jenney, moreover, fought shy of the frankness of Burnham & Root's treatment of the Montauk Block; instead he phrased his storeys in groups, almost as if several buildings of normal three- or four-storey height had been casually piled one on top of the other.

Before the Home Insurance was finished in 1885 two more major commercial monuments were rising in Chicago, Richardson's Marshall Field Wholesale Store (Plate 116B), last but one of the large buildings erected in Chicago with walls entirely of bearing masonry, and Burnham & Root's Rookery Building (see Chapter 13). Both were begun in 1885, Richardson's being finished in 1887 and Burnham & Root's a year earlier in 1886. The exterior of the eleven-storey Rookery Building is not an example of the stripped 'functionalism' that these architects had introduced in their Montauk Block but rather a provincial imitation of the Richardsonian. In the court walls, however, the architects used – and with complete awareness of its implications – the new structural method of Jenney's Home Insurance Building, carrying the brickwork above the sides of the central glass-roofed lobby entirely on the internal metal [18] skeleton.

With the advent of Richardson in 1885, the main lines of development in commercial architecture, both as regards design and as regards construction, might seem to have been concentrated in Chicago. It is well therefore to note again that McKim, Mead & White in their Goelet Building on Broadway in New York of 1885–6 provided almost as frank an expression of the skyscraper, or tall office building of many identical storeys, at least above their Renaissance ground-floor arcade, as did Burnham & Root in the Montauk Block. Their windows, however, were phrased in triplets like Hunt's on the Tribune Building and also grouped vertically within tall bay-width panels of moulded brick rising all the way to the cornice. This was a more architectonic solution of the problem, and is hardly to be castigated as 'traditional' or even as 'unfunctional'. Moreover, another New York building, Babb, Cook & Willard's De Vinne Press of 1885 in Lafayette Street, is not altogether unworthy of comparison with the Field store. It lacks the regularity and the grandeur of scale of Richardson's masterpiece, but George F. Babb used his fine red brick in a belated *Rundbogenstil* way, and not without

some conscious reminiscence, one may presume, of Durand's exemplars of the beginning of the century.

Richardson's last commercial work, the Ames Building in Harrison Avenue in Boston of 1886–7, on which the arcade was carried the full height of the building and the reveals much reduced, had no immediate influence in Chicago (see Chapter 13). Sullivan's first really great work, the Auditorium Building (now Roosevelt College) in Chicago, derived for the most part straight from the Field store, at least as regards the exterior. Designed in 1886 and built in 1887–9, this is a vast and complex edifice, or group of edifices, with a hotel on the Michigan Avenue front, an opera-house entered in the middle of the Congress Street side, and offices along Wabash Avenue at the rear. The walls are all of bearing masonry still. In order to incorporate more storeys than Richardson had ever done, Sullivan carried up his heavy rock-faced granite base through two mezzanine levels and increased the number of floors subsumed by the main arcade which rises from the first storey (Plate 117A). He also used light stone throughout, instead of the red granite and the brownstone of the Field store, with its surfaces all smooth-cut above the mezzanines.

This flattening of the wall-plane was carried even further on the tower which rises above the portal of the opera-house in Congress Street. On that wide arched panels of very slight projection are filled with articulated screens of stone in which the windows are arranged in a continuous grid with no evident storey lines. The eaves gallery at the top of the tower, a stubby colonnade set in a long horizontal panel with a continuous ribbon-window behind – the window in fact of the Adler & Sullivan office – is so like Thomson's on the front of his Queen's Park church of the sixties in Glasgow that it is hard to believe Sullivan did not know it. Yet all the evidence indicates that he continued to abjure every European influence.

In the interiors, particularly the bar and the banquet hall at the top of the hotel, Sullivan's ornament changed even more markedly than his exterior design. Here also there is doubtless Richardsonian influence, but coming from the Byzantinizing detail worked out by John Galen Howard of the Richardson office for the MacVeagh house of 1885–7 in Chicago rather than from the Field store.

However, one cannot entirely discount the possibility of a contribution in the field of ornament by a brilliant young man of twenty, Frank Lloyd Wright, whom Sullivan and Adler had just taken on as a draughtsman in 1887 and who was soon given charge of the innumerable detail drawings that this vast project required. Nurtured on Owen Jones's *Grammar of Ornament*,[19] which the Paris-trained Sullivan had not hitherto known, as well as on the writings of Ruskin, Morris, and Viollet-le-Duc, Wright may perhaps have encouraged Sullivan to move away from the bold coarseness of his earlier ornament towards the lush elaboration of intricately plastic surface decoration henceforth characteristic of his work. It is tempting, even, to believe that Jones's page of Celtic ornament particularly attracted the Celtic Sullivan's fancy.[20]

Together with the Auditorium, though commissioned a year later, there was also rising in Chicago in 1887–9 the Tacoma Building of William Holabird (1854–1923) and Martin Roche (1855–1927), two young architects trained in Jenney's office. Here the

exterior walls on the two fronts were entirely carried by the metal skeleton within, only the rear walls and some of the interior partitions being of bearing masonry like the walls of the Auditorium. Moreover, this fact was made evident in the frank if not particularly distinguished treatment of the two fronts. Vertical ranges of oriels were carried the full height of the building, and there was only a minimal brick and terracotta sheathing of the structural verticals and horizontals. A more or less Richardsonian cornice capped the whole, but the general effect was closer to Ellis's Oriel Chambers of the sixties in Liverpool or to some of Sullivan's earlier buildings than to the Field store.

Despite the general swing of Eastern architects towards the Neo-Academic in these years, some who were doing commercial work were not out of step with what was happening in Chicago. For example, there are office buildings and warehouses in Boston and New York of relatively modest height built in the late eighties and early nineties that emulate in brick the arcading of the Field store with almost as much success as Sullivan. Similar things can be seen in many Middle and Far Western cities, but these derive more probably from Sullivan or Burnham & Root than directly from Richardson.

In the Middle West, moreover, McKim, Mead & White were building in 1888–90 two very large business buildings, still with bearing masonry walls, for the New York Life Insurance Company, one in Omaha, Nebraska, and one in Kansas City, Missouri, of effectively identical design. Unlike the already characteristic Chicago 'slabs' – the quadrangular plan of the Rookery Building is exceptional – these are U-shaped, and each has a tower rising above the main mass at the rear of the court. The treatment of the walls with tall arcading follows as evidently from the Field store as does Sullivan's at the Auditorium; like that of the contemporary Boston Public Library, however, the fairly simple detailing is of High Renaissance rather than Richardsonian Romanesque character.

Before these towering blocks were finished in the West the new 'skyscraper construction' had been introduced in New York by Bradford Lee Gilbert (1853–1911). His Tower Building of 1888–9, as its name implies, was a tower, not a slab, with more or less Richardsonian detailing. It is worth noting that the Tower Building – ten storeys, 119 feet – was *not* as tall as the first New York skyscrapers built in the early seventies with bearing walls. Indeed, Post's World or Pulitzer Building of 1889–90 in New York with twenty-six storeys, the tallest built up to then – 309 feet – still had bearing walls. Of course, the Eiffel Tower, completed in 1889, exceeded in height by a great deal all the skyscrapers of its day whatever their construction; indeed, it was not overtopped until the Empire State Building in New York rose from the designs of Shreve, Lamb & Harmon in the early 1930s at the end of the second wave of skyscraper building following the First World War.

Post's Western Union Building of the early seventies was in the Second Empire mode; his World Building was still French, but what can better be called 'Beaux-Arts'. It is designed like a series of three- or four-storey Renaissance palaces, one on top of the other, and crowned with a large and ornate dome. The next New York skyscrapers all followed the new structural method introduced by Gilbert in the Tower Building; but Post, Price, and the other architects who designed them used an ornate paraphernalia of

Renaissance ornamentation with none of the discretion of McKim, Mead & White on their Kansas City and Omaha insurance buildings. Characteristic of the period are Price's American Surety Building at Broadway and Wall Street, begun in 1894, and his St James Building of 1897–8 at 1133 Broadway, both in New York, and Post's Park Building in Pittsburgh, completed in 1896. The latter's Havemeyer Building, completed in 1892, was by exception still somewhat Richardsonian.

The maturing of an original sort of skyscraper design around 1890 is a Middle Western, and almost specifically a Chicago, story to which New York architects made no contribution. Boston's architectural leadership had ended with the death of Richardson; despite the prominence of McKim, Mead & White and their large Eastern following, leadership in this field passed almost at once to Chicago. It was most appropriate that Richardson's masterpiece, the Field store, should have been built there; the inspiration it provided, as we have already seen in the case of the Auditorium Building, played an important part in the succeeding Middle Western development.

In 1889–90 Jenney built for Levi Z. Leiter a large building on South Clark Street in Chicago now occupied by Sears, Roebuck & Company. In this he not only used the new 'skyscraper construction' for the exterior walls but also – with the presumptive aid of his assistant and later partner William Bryce Mundie (1863–1939) – arrived at an expression of its particular character as logical as that of the Tacoma Building and rather more monumental. Like all the other Chicago designers in these years, Jenney and Mundie were influenced here by the Field store. The uncompromisingly block-like shape of this tremendous building, with its heavy plain entablature and pilaster-like corner piers, is Richardsonian both in its scale and in its simplicity (Plate 117B). The various groupings of stone mullions that clad the main piers and subdivide the bays, lithe and light though they are, were clearly envisaged as Romanesque colonnettes and even carry modest foliate capitals. Despite the dichotomy of the solidly Richardsonian silhouette and the open screen-like treatment of the walls, the effect is coherent and dignified. In this respect the Sears, Roebuck Building is superior to Sullivan's very Richardsonian [21] Opera House Building in Pueblo, Colorado, of 1890 which was burned in the 1920s. The Walker Warehouse in Chicago of 1888–9 better displayed his great talent.

Three buildings of 1890–1, two in Chicago by Burnham & Root and one in St Louis by Sullivan, express the wide range of creative possibilities in skyscraper design at this point. The most advanced is Burnham & Root's Reliance Building, at least in terms of direct structural expression, for it is a refined and perfected version of Holabird & Roche's Tacoma Building (Plate 115B). The light-coloured terracotta cladding of the vertical members, particularly on the flat oriels, is reduced to a minimum; the terminal member is a thin slab, not a cornice or an entablature; and the only stylistic reminiscence is in the cusped panelling – neither Romanesque nor Renaissance, but slightly Late Gothic in character – of the spandrels. Carried up only four storeys in 1890,[22] though extended to its present thirteen storeys by D. H. Burnham & Company in 1894, the Reliance seems to have attracted less attention when first built than it does today.

Burnham & Root's other significant skyscraper of this particular moment, the sixteen-storey Monadnock Building begun in 1891, the last tall Chicago building with bearing

walls of brick, was and still remains more famous than the Reliance; doubtless it is also finer, although much mid-twentieth-century critical opinion has favoured the Sears, Roebuck Building of Jenney & Mundie and the Reliance because they are more advanced technically. The smooth shank of the Monadnock, varied only by the slight projection of the recurrent oriels, has a most subtle and elegant taper or reverse entasis. The final bending outward of the brickwork to provide a cove cornice unifies the whole formal concept with extraordinary effectiveness. Few large buildings have ever achieved such monumental force with such simple means. There is almost literally no detail of any sort, whether derivative or original.

Sullivan's Wainwright Building of 1890–1 in St Louis, Missouri, in which he and Adler used 'skyscraper construction' for the first time, no longer dominates two- and three-storey neighbours as it did when newly built; thus the prominence that the relatively great height gave it in the city picture of the nineties can hardly be realized today. But Sullivan undoubtedly sought to emphasize what seemed to contemporaries, as they do not to posterity, its very tall proportions (Plate 118). Continuous vertical piers of brick, like those on his Troescher Building of 1884, clad the main metal members of the steel skeleton, yet identical brick piers with no major structural members behind them also serve as intervening mullions. At the base, however, the wide windows of the ground storey and the mezzanine reveal the true width of the structural bays of the steel skeleton as the treatment of the shank of the building does not. The piers are considerably broader than most of those on the Sears, Roebuck Building; but they are also topped, like Mundie's, with ornament that forms a sort of capital. Moreover, the attic storey above is quite hidden behind a deep band of the richest Sullivanian ornament elsewhere restricted, as on the Troescher Building, to the recessed spandrels. The 'cornice' above this frieze-like attic is merely a slab, but a much thicker one than that which caps the Reliance Building. Nothing of Richardson's direct influence is left; but by now Sullivan had learned from the Field store the basic lessons of scale and order, applying them here in a visually sure but not particularly frank way to the new type of metal-skeleton construction. The plan is U-shaped, like those of the McKim, Mead & White buildings in Kansas City and Omaha, but the court is to the rear, so that the block appears unified from the surrounding streets.

In Sullivan's next important work, the Schiller Building in Chicago of 1891–2, he adopted – exceptionally for him – a truly tower-like shape. Here the masonry piers that clad the structural steel stanchions are not doubled by identical mullions between; instead these piers are linked by arches below a sort of frieze. The 'frieze' is really a very ornately arcaded eaves-gallery, not a flat band as on the Wainwright Building, occupying a whole storey below the thick slab cornice.

Interchange of ideas was continuous in these years between the various Chicago architects' offices, while the influence of the Academic Revival in the East, dominant in almost all the buildings at the World's Fair of 1893 save Sullivan's own Transportation Building, was still negligible in the commercial field. Thus Sullivan's Stock Exchange Building of 1893–4 in Chicago borrowed its rather clumsy ground storey and mezzanine, with a cavernously Richardsonian arched entrance, from Burnham's Ashland Block of 1892 as

well as its crisp oriels from his Reliance Building. Here these oriels alternate with horizontal openings of the type known as 'Chicago windows' sharply cut through the smooth light-coloured terracotta of the wall plane. 'Chicago windows', with a wide fixed pane in the centre and narrower sashes that open on either side, were used by most Chicago architects in this decade and the next. A heavy moulded cornice, not just a thick slab, crowns the whole above a colonnaded eaves-gallery very like the one at the top of the Auditorium tower.

What should probably be considered Sullivan's masterpiece, the Guaranty Building in Buffalo, N.Y., followed in 1894–5 (Plate 119). One of the most significant new themes in the design of this skyscraper, whose premonitory character can only be fully appreciated in relation to the use of *pilotis* in later modern architecture (see Chapter 22), is already to be found in a project of Sullivan's of the previous year for the St Louis Trust & Savings Bank. This is the treatment of the ground storey, where the terracotta sheathed piers were isolated from the wall plane by bending back the tops of the shop-windows. The piers are thus nearly free-standing and seem to lift the shaft of the building above them right off the ground. This allows circumambient space to penetrate under the main volume of the building. Thus the fact that the edifice is a hollow cage is very strongly suggested, and the wide shop-windows do not appear to undermine the walls above them as in so much commercial work of the nineteenth century.

There are several reasons, not intrinsic to Sullivan's design, that explain why the Guaranty remains the most effective of all the early skyscrapers. Since downtown Buffalo has not filled up with buildings of equal or greater height in the way of downtown St Louis and the Chicago Loop, the Guaranty still rises high above most of its modest neighbours, in effect a tower as well as a slab, although actually of U-shaped plan like the Wainwright. In this city, moreover, which has in the last sixty years remained considerably cleaner than Chicago or St Louis, the colour of the tawny terracotta sheathing has not been entirely obscured by grime. These were happy local conditions that Sullivan could not foresee.

The plastic handling of the crown of the Guaranty was perhaps suggested to Sullivan by the effectiveness of the cove at the top of Burnham & Root's Monadnock Building. Here the crowns of the arched façade bays – two to each structural bay, as the wide spacing of the piers at ground-storey level so clearly reveals – are related to the outward curve of the top of the wall below the terminal slab. The profuse and melodious curvilinear ornament, subsuming the round attic windows, echoes and complements the plastic theme. This is an example, rare even in Sullivan's most mature work of the mid and late nineties, of the successful integration of architectonic and decorative effects. The treatment of the terracotta cladding throughout the exterior of the Guaranty, moreover, covered all over as it is with lacy geometrical ornament in very low relief, seems to lighten the whole. The cladding is read as a mere protective shell carried by the underlying steel structural members and not as solid masonry like the brick piers of the Wainwright Building.

Just as the Wainwright Building may be contrasted on the one hand with the still greater solidity of the Monadnock Building – in that case justified by the bearing-wall

construction – and on the other with the openness of the Reliance, so it is of interest to compare the Guaranty with two other big business buildings of 1895 by other Chicago architects. In the Ellicott Square Building, also in Buffalo, Burnham was strongly influenced by his close association with McKim at the World's Fair. With the assistance of his designer Atwood, whose short life ended this same year, he adopted the elaborate Renaissance membering and the heavy masonry vocabulary of the New York skyscraper architects, although he retained the quadrangular plan and the glass-roofed central court of the Rookery. On the other hand, in Chicago Solon S. Beman (1853–1914) in the Studebaker (now Brunswick) Building came very close to providing an all-glass front, despite the profusion of Late Gothic frippery with which he detailed his very restricted terracotta cladding.

Adler had parted from Sullivan in 1895, but Sullivan's career as a skyscraper builder continued for a few more years at a very high level. In his next skyscraper, the Condict Building in New York of 1897–9, he reduced very considerably the width of the mullions between the piers so that they became mere colonnettes, and even these are omitted in the first storey. But this highly logical differentiation between pier and mullion, revived from the treatment of his Rothschild Store of 1880–1, still gets lost at the top in a flurry of ornamentation almost as turgid in its very different and almost *quattrocento* [23] way as the top of that very early façade. The treatment of the ground storey was originally like that of the Guaranty, but has been modified by later shop-fronts.

The next year Holabird & Roche built three contiguous buildings on Michigan Avenue in Chicago for Harold McCormick (Plate 120). The two southerly ones are excellent examples of the work of the Chicago School; they are a little less extensively glazed than Beman's Studebaker Building or Holabird & Roche's own McClurg Building of 1899 but with crisp and simple, if quite conventional, moulded brick detail on the piers and rather plain cornices of wholly academic character. Standard Chicago windows are used throughout. The third façade on the north, that of the Gage Building at 18 South Michigan Avenue, while fronting a structure also by Holabird & Roche, is itself by Sullivan. A different arrangement of the windows, a bolder moulding of the terracotta cladding of the piers – there were no intervening mullions now, any more than on his Troescher Building of 1884 – and a strategic spotting of the chicory-like ornament – as well as, originally, a rich picture-frame-like band around the ground-storey shop-window – produce an entirely different effect. This effect is no less expressive of the underlying structure, but it represents a fuller and subtler deployment of architectural resources than Holabird & Roche provided on the façades next door.

The Gage Building was Sullivan's penultimate major work. With the Carson, Pirie & Scott Department Store his career as an architect of big commercial buildings came to an end. This was designed in 1899 and the original three-bay and nine-storey section on Madison Street built in 1899–1901 for Schlesinger & Mayer; it was completed in 1903–4 for the present owners with the erection of the twelve-storey section that runs along State Street.[24] This building, which was Sullivan's swan song, has also seemed to many critics his masterpiece (Plate 121). It lacks, however, the unity of the earlier Guaranty Building, having been built in two – indeed actually in three – successive campaigns.

Despite the prominence of its site in the Chicago Loop, the store is inevitably overshadowed today by later and taller neighbours; nevertheless, it occupies a very high place in the Sullivanian canon.

There is no vertical emphasis except on the rounded pavilion at the corner, where continuous colonnettes rise the full height between the rather narrow bays; this feature was intended from the first but not built until 1903–4. The wide Chicago windows are crisply cut through the white terracotta sheathing just like the windows between the oriels on the Stock Exchange Building. The underlying grid of the structural steel frame – always more horizontal than vertical in effect, as the Reliance Building so clearly reveals – completely controls the surface pattern of the fenestration. On the Guaranty Building Sullivan emphasized the structural piers at their base by bending back the shop-windows of the ground storey; here it was the topmost storey that he set back, revealing the tops of the piers like little free-standing columns beneath the terminal slab in the spirit of his earlier eaves galleries. This treatment – most unfortunately replaced in 1948 by a flush parapet – increased very notably the effect of volume in much the same way as the parallel treatment at the base of the Guaranty.

At the base here, however, the shop-windows are carried up two storeys and given picture-frame-like surrounds, somewhat as on the Gage Building. In the cast-iron ornamentation of these frames, now much simplified, as also in that of the canopy on the north side and around the entrances in the rounded corner pavilion, Sullivan reached a peak of virtuosity and lush elaboration that has seemed to later critics quite at odds with the severe rectangularity of the façades above. There can be no question, however, that Sullivan considered ornament of the greatest importance in architecture and gave to its invention and elaboration his best thought and energy. It is certainly an interesting coincidence, moreover, rather than a matter of influence either way, that in these very years in Europe the newest architectural mode, the Art Nouveau, also put heavy emphasis on a somewhat similar sort of curvilinear decoration, often in association with exposed metal construction, and most notably on department stores (see Chapters 16, 17).

Sullivan's ornament never had much influence either at home or abroad. Although Sullivanian skyscrapers of varying size and quality exist in many Middle Western and Far Western cities, most of them built in the first two decades of the new century, only the Rockefeller Building in Cleveland, built in 1903–6 by Knox & Elliot and extended laterally in 1910, really employs ornament, although of a drier and more geometrical order deriving from Owen Jones's *Grammar*, in anything like Sullivan's way. On Sullivan's own late buildings, mostly tiny banks in small Middle Western towns, and in comparable work by his former assistant George G. Elmslie (1871–1952) and William G. Purcell (b. 1880) the ornament tends to get more out of hand than on any of his skyscrapers of the nineties except perhaps the Condict Building. The best of Sullivan's is the National Farmers' Bank at Owatonna, Minn., of 1908; but Purcell & Elmslie's Merchants' National Bank in Winona, Minn., completed in 1911, might easily be mistaken for Sullivan's work, for it is of comparable quality.

In the skyscrapers of the late nineties and the first two decades of the twentieth century designed in other Chicago architectural offices, such as D. H. Burnham & Co.,

Jenney & Mundie, and Holabird & Roche, there was rarely any attempt to vie with Sullivan as an ornamentalist but rather a continuance of the straightforward sort of design of the last-named firm's Michigan Avenue buildings of 1898–9. A particularly fine and very large example is their Cable Building in Chicago of 1899. In the Fisher Building of 1897, also in Chicago, the Burnham firm more or less repeated the formula of the Reliance Building, but with a profusion of rather archaeological Late Gothic detail, eschewing the New York influence apparent in the Ellicott Square Building of 1895. Jenney & Mundie, rather more than the others, tended to follow the leadership of the New York architects of the day in using academic detail.

On the whole, the Chicago School continued to be vigorous, if not especially creative, down to the First World War, all the way through a period during which New York skyscrapers, still usually conceived as shaped towers rather than as plain slabs, received a succession of different stylistic disguises as they rose higher and higher. The forty-seven-storey (612-foot) Singer Building [25] of 1907 by Ernest Flagg (1857–1947) with its curious bulbous mansard – 'Beaux-Arts' of a quite aberrant sort – was followed by the campanile-like 700-foot Metropolitan Tower in Madison Square of 1909 by Napoleon LeBrun & Sons; [26] and that in turn by the cathedral-like Late Gothic elaboration of the Woolworth Building [27] of 1913 by Cass Gilbert (1859–1934), fifty-two storeys and 792 feet tall, which is still one of the major landmarks of down-town New York (Plate 178). A new flurry of skyscraper building followed in the twenties (see Chapter 24). The story with which this chapter is concerned, however, had reached its climax with the Chicago skyscrapers of the nineties, even though they were soon overshadowed in height and in contemporary esteem by the taller and more spectacular towers of Manhattan. Moreover, most of the big cities of the country, including Chicago, eventually sought to imitate the New York mode. But size is not, even in this period, a measure of quality, and the tallest skyscrapers are not the best, any more than the longest bridges are the most beautiful. The current revival of skyscraper building in New York confirms this judgement (see Chapter 25).

A difficult question remains to be asked, even if it cannot be very satisfactorily answered: Why was the nineteenth-century development of commercial architecture, from Nash's Regent Street to Sullivan's skyscrapers, so completely an Anglo-American achievement? A few reasons may at least be suggested. On the Continent business activity was less concentrated in special urban districts in the nineteenth century, and was hence less likely to develop its own architectural programme. The big new nineteenth-century blocks in cities like Paris and Vienna and Rome generally serve a variety of purposes and almost always consist of residential flats in the upper storeys. In England and in America, on the other hand, most dwellings were still not flats but houses before 1900, and these fled farther and farther from the commercial areas as the nineteenth century progressed. The high property values in the central urban districts of the big Anglo-American cities, rising very rapidly in the second half of the century, encouraged the exploitation of their sites with taller and taller buildings. These values also helped to drive out the earlier inhabitants, leaving such areas as the London City and the Chicago Loop all but deserted after office hours.

Neither the office blocks of London and the big provincial English cities of the fifties and sixties nor, *a fortiori*, the skyscrapers of New York of the seventies and those of Chicago of the nineties can readily be matched elsewhere – except, of course, to some extent in the British Dominions and Colonies. Yet European cities do offer certain nineteenth-century commercial structures that are of real interest. The covered *passages* and *galeries*, from the modest ones of the early decades of the century in Paris to Mengoni's great Galleria Vittorio Emanuele II in Milan (Plate 75B) of the sixties, offered an urbanistic device of real significance. This is barely to be appreciated in the various extant English and American examples, such as the still flourishing Burlington Arcade in London or the Arcade in Providence, R.I., which is maintained as a historic monument though all but deserted by commerce.

Related to these structures serving multiple business purposes was the gradual development of the department store, a grouping together of various separate shops under one management and one roof, of which the Galeries du Commerce et de l'Industrie in Paris of 1838 were a relatively early example (Plate 62A). Exploiting like the *galeries* the possibilities of iron-and-glass roofing, the early Continental examples of the department store had their more modest English and American counterparts such as Owen Jones's Crystal Palace Bazar of 1858 in London or the Z.C.M.I. in Salt Lake City, founded by the Mormon leader Brigham Young himself and housed in cast iron in 1868.

The most notable later nineteenth-century department stores are in Paris and Berlin. In Paris the still extant Bon Marché of 1876 in the Rue de Sèvres by L. C. Boileau (1837–?), son of the builder of several Second Empire churches of iron, and the engineer Eiffel and the Printemps at the corner of the Rue de Rome and the Boulevard Haussmann of 1881–9 by Paul Sédille (1836–1900) were remarkable in conception if without much distinction of design. However, the Bon Marché is now completely masked externally by a masonry façade of the 1920s, and little of interest remains visible inside the Printemps. Of the portion of the Wertheim Department Store in Berlin built by Alfred Messel (1853–1909) in 1896–9 nothing survives.

Just after 1900, when the metal-and-glass construction of the interiors of department stores came to be generally exposed externally, this line of development came to its climax (Plates 131B and 133). This climax is so closely associated with the decorative and architectural development called Art Nouveau that the later Continental department stores may better be discussed in connexion with that (see Chapters 16 and 17). Being of exposed metal, however, not of masonry-sheathed 'skyscraper construction' and relatively low, these stores are closer in character to the cast-iron commercial buildings of the third quarter of the century in America and Britain than to the tall Chicago structures of 1890–1910.

Steel construction of the American type, with the internal skeleton carrying a protective cladding of masonry, has gradually spread since the opening of the century to all parts of the world that produce or can afford to buy structural steel. It was, for example, introduced into London by the Anglo-French architects Mewès & Davis in building the Ritz Hotel there in 1905. Yet it remains typically American. In most other countries reinforced concrete rivals or completely takes its place as the characteristic

material for building large structures of all sorts. The story of reinforced concrete had its technical beginnings in the mid nineteenth century; but it was not before the nineties that it first began to be exploited on a large scale and for conscious architectural effect. The first important reinforced concrete buildings, French like most of the best department stores of around 1900, will be mentioned later (see Chapter 18).

The whole picture of architecture in the twentieth century, so different from the picture of architecture before 1850, was modified by the developments that culminated in the Chicago skyscrapers. However important this has been for all later architecture both technically and aesthetically, it is important to stress here, as with the mid-century monuments of iron and glass, that the successive stages in the development are not solely, or even primarily, of premonitory and historical interest. From Parris's granite buildings in Boston of the twenties, through the arcaded English commercial work of the fifties and sixties, to Richardson's Field store and Sullivan's skyscrapers in Chicago, St Louis, Buffalo, and New York, enlightened commercial patrons demanded and often received the best architecture of their day. Undoubtedly the functional and technical challenges of commercial building brought out the creative capacities of three generations of architects as no other commissions did so consistently. Compare Parris's Grecian temple church, St Paul's in Boston, with his granite 'skeleton' fronts beside the Quincy Market (Plate 112B); set Godwin's Stokes Croft Warehouse beside his town halls (Plates 113 and 92A); measure Richardson's Field store even against his Pittsburgh Jail (Plates 116B and 108B). Then the strictly *architectural*, as well as the technical and social, significance of the major commercial monuments of the nineteenth century will be evident.

This chapter has summarized what was probably the greatest single innovation in nineteenth-century architecture, the rise of a new type of building to a position of prestige and of achievement comparable to that of churches and palaces in earlier periods. The same cannot be said of domestic architecture. The house was hardly a nineteenth-century invention like the office building. It was, however, modified almost beyond recognition as the century progressed, at the hands of several generations of creative architects. Around 1900 there are few if any churches, for example, to rival Sullivan's skyscrapers in quality; but there are some houses, especially several by his disciple Wright and by his English contemporary Voysey.

CHAPTER 15

THE DEVELOPMENT OF THE DETACHED HOUSE IN ENGLAND AND AMERICA FROM 1800 TO 1900

IN the long story of man's dwellings from prehistory to the present, the Anglo-American development that took place in the hundred years between the 1790s and the 1890s is of considerable significance, particularly as it provides the immediate background of the twentieth-century house. Architectural history has generally been little concerned, in dealing with periods earlier than the eighteenth century at least, with the habitations of any but the upper classes. The study of rural cottages in various regions of the world has been more a matter for anthropological investigation; the housing of the urban poor, when that was other than the makeshift adaptation of grander structures fallen into decay, remains for most early periods a matter of mystery. We know that ancient Rome had its blocks of middle-class flats of many storeys; although the links are not easy to recover, there was certainly some continuity in Mediterranean lands between that form of urban housing in antiquity and what can be traced from the medieval period down to the nineteenth century. Northern Europe in the late Middle Ages saw rather the development of individual urban dwellings with party walls, ancestors of the terrace-houses that first appeared in England in the seventeenth century.

The detached house of moderate size, so familiar today, the principal type of dwelling to undergo notable development in the nineteenth century in Anglo-Saxon countries, has no such remote Classical origins as the Continental flat or apartment. It made its appearance as the dwelling of the yeoman when economic conditions in late medieval England encouraged the rise of a class between the feudal landowner and the peasant parallel to the skilled artisan class in the towns. The conditions of settlement of the British colonies in America, particularly in New England, encouraged the continuation through the seventeenth century of this type of dwelling almost to the exclusion of any other sort, since towns were then small and large estates rare. Around 1700 in America, though considerably earlier in England, relatively advanced contemporary modes began to have some influence on the design of such houses. With a lag of as much as a quarter of a century, the architectural developments of the home country were generally followed in the colonies; nor did political independence much affect the dependent cultural relationship in this field after the American Revolution.

The effects of the Picturesque point of view on the development of the house in England around 1800 were several (see Chapter 6). On the one hand, the newly fashionable attitude gave prestige to modest detached dwellings, raising the potential status of the 'cottage' from an agricultural labourer's hovel to a middle-class habitation or even on occasion a holiday 'retreat' for the upper classes – at first by adding the French adjective *orné* (Plate 122A). At the same time the status of the 'villa' tended to be reduced from a large Italianate mansion on its own estate to a moderate-sized house at the edge of town.

In much of the prolific architectural literature of the period, the hierarchy of residential building types was Rousseauistically inverted as rustic models, both native and Italian, were proposed for emulation in edifices of fairly considerable size. Thus several modes of informal design that had made their eighteenth-century debut in garden ornaments received more serious attention from architects as they came to be considered suitable for medium-sized dwellings and even sometimes for quite large mansions. As we have already seen, the towered Italian Villa was first introduced as a modest detached house by Nash at Cronkhill in 1802. It was similarly utilized by Schinkel (Plate 14A) and Persius at Potsdam a generation later, although Royalty still preferred to dwell there in Grecian dignity or Castellated pomp (see Chapter 2). Somewhat later, however, the Italian Villa provided (none too happily) a Royal retreat when Prince Albert decided on the use of this mode for Osborne House on the Isle of Wight in the mid forties.

Not all Picturesque modes were equally adaptable to middle-class dwellings. The Indian found its most notable realizations in a large country house, S. P. Cockerell's Sezincote, and a Royal folly, Nash's Brighton Pavilion (Plate 48). There were, however, considerably later American examples [1] on a somewhat more modest scale, such as Iranistan at Bridgeport, Conn., built for the circus magnate P. T. Barnum in 1847–8, and Longwood, near Natchez in Mississippi, designed by Samuel Sloan (1815–84) in 1860. But the Indian mode contributed the veranda, henceforth an integral feature of American domestic architecture, though rare after the Picturesque period in England. Verandas very early lost their Oriental detail, however. In front of Rustic Cottages they were often supported by bark-covered logs, but they could also acquire the formal elements of Italian loggias, Tudor arcades, Swiss galleries or, most frequently, Grecian porticoes and 'pilastrades' when adapted for use with other current modes. In some cases the veranda, carried on occasion to two storeys in height, became the main theme of the exterior, yet was detailed so simply that no modish name properly applies (Plate 122A). Even the Castellated mode, although used mostly for rather large houses (Plate 49), encouraged loose asymmetrical massing of the sort that is still more characteristic of the towered Italian Villa.

The Picturesque was thoroughly eclectic, in both possible senses of the word, as well as occasionally original. On the one hand, the point of view encouraged the parallel use of diverse modes. In theory, these were to be chosen according to their suitability to various sorts of natural settings, but in practice several were often employed side by side, as in Nash's Park Villages in London, begun in 1827, and in the contemporary and later development of comparable suburban areas both in England and in America. On the other hand, the combination in one design of features derived from several different modes was allowable, even praiseworthy – low-pitched roofs with very broad eaves borrowed from the Swiss Chalet, towers from both the Castellated Mansion and the Italian Villa, bay-windows from the Tudor Parsonage, and verandas from the Indian were all part of a common repertory exploited rather indiscriminately. Basic to the Picturesque point of view and often determinant of choice of mode and even of individual features was the pre-occupation with the natural setting; verandas, loggias,

bay-windows and prospect towers were desirable, even necessary, features because they made possible the fuller enjoyment of the circumambient scene.

All these features affected house-plans in detail; but domestic planning in general was not as consistently re-organized as might have been expected, if only because the Picturesque point of view was so predominantly visual rather than practical in its usual concerns. Asymmetrical massing allowed, even forced, asymmetrical planning, however, thereby encouraging functional differentiation of the disposition and the sizes of various

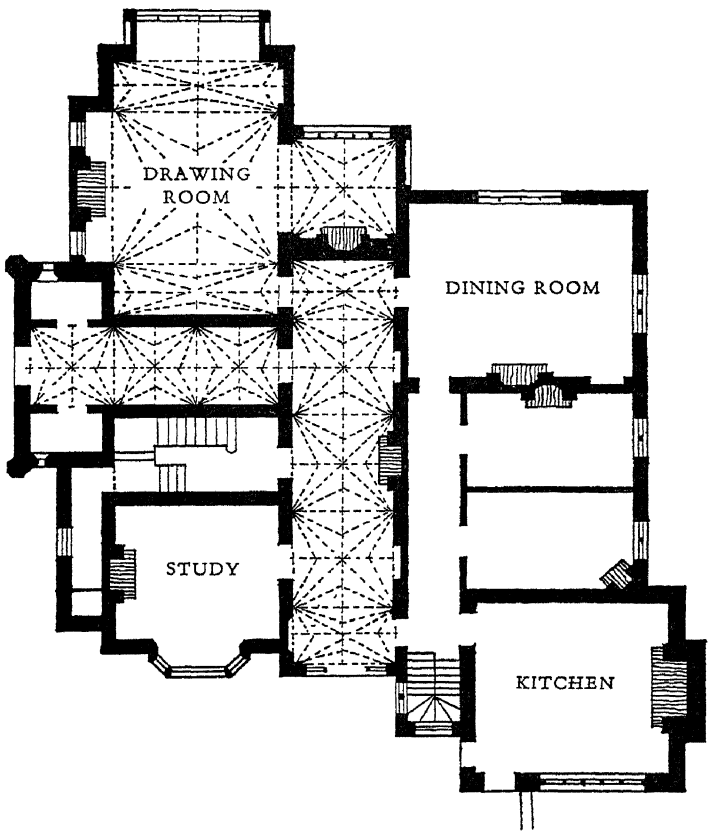


Figure 21. T. F. Hunt: house-plan
(from *Designs for Parsonage Houses*, 1827)

rooms (Figure 21). Yet very often, behind irregular exteriors, the plans were only slightly dislocated from the formal patterns of the preceding Palladian period. Although the increased articulation of most house-plans allowed the introduction of windows on several sides of many rooms, more significant at this stage was the frequent use of irregular shapes for the larger rooms, their main rectangular spaces complicated by external oriels and by internal ingle-nooks. None of these individual changes can be very precisely dated, at least in the current state of knowledge of the development of the house-plan in this period. Almost all of them were generally familiar in England by 1810. Tudor Parsonages, whether or not occupied by members of the clergy, were likely to be most adeptly planned.[2] In them the well-defined needs of a family of upper-class

tastes but relatively low income encouraged a more efficient grouping of the rooms and a clearer distinction of separate functions – entrance hall, drawing-room, dining-room, study, kitchen, scullery – than had been common earlier in such medium-sized dwellings.

In the first third of the century the various Picturesque modes of house-design were very widely exploited in England for middle-class habitations in suburban areas, having generally made their first appearance a decade or so earlier in lodges or other accessories to large private estates. They were also popular at the new seaside resorts, such as Sidmouth in Devon and Bournemouth in Hampshire, where they often housed more exalted clients. At Sidmouth, for example, what is now the Woodlands Hotel was remodelled from a barn into a barge-boarded Cottage Orné by Lord Gwydyr in 1815; the nucleus of the Knowles Hotel there was Lord Despencer's cottage of a few years earlier; and the Royal Glen Hotel, a modest Castellated house then known as Walbrook Cottage, was built early enough to house Queen Victoria as a baby. Although the prestige of the Picturesque declined rapidly in high aesthetic circles after 1840, the rigorous principles of Pugin and the ecclesiologists had little effect on the operations of suburban builders, who continued for decades to follow the various well-established modes of a generation earlier.

As Latrobe's 'Gothick' Sedgley, built outside Philadelphia in 1798, and various other Neo-Gothic structures in Philadelphia and Boston of the first decade of the new century make evident, the Picturesque came early to the United States. Yet it was hardly before the thirties that the various Cottage and Villa modes began to compete at all with the Greek temple and the formal post-Palladian house modernized by the use of Grecian detail; only with the appearance in 1842 of *Cottage Residences* by A. J. Downing (1815–52) [3] were they enthusiastically propagated.

Earlier, new developments in the planning of the ubiquitous moderate-sized free-standing houses were not very notable in America. In the 1790s the influence of Adam, and possibly of the French, encouraged some experimentation with variously shaped rooms; but this largely died out when the necessary rectangularity of the Greek temple house, only extended by wings in the largest examples, tended to reimpose the formal Anglo-Palladian plan with central stair-hall and four nearly equal-sized corner rooms. Four smaller houses with pediment fronts, however, a sort of terrace-house plan was increasingly popular, with stair-hall at one side, two principal living rooms one behind the other, and a narrower kitchen wing extending to the rear. A planning innovation that first appeared in America in the 1790s, by no means unknown earlier in England but rare except in terrace-houses, was the opening together of two rooms – front and back parlours – by means of broad sliding doors. This became increasingly common after 1800. Moreover, the temple portico provided the equivalent of a shallow veranda across the front of the house and was sometimes replaced or supplemented by a deeper colonnaded porch at the sides or rear. The veranda, indeed, had reached the southern states fairly early in the eighteenth century, arriving from the East via the West Indies. In its usual two-storeyed form it was easily merged with the monumental colonnades demanded by the Grecian mode (Plate 38B).

Thus, even before a rather belated wave of strong Picturesque influence began to drive out the temple house in the forties, early nineteenth-century American houses had certain definitely post-Colonial characteristics in their plans. Of later house-planning in the United States in the forties and fifties almost everything that has been said about English planning in the preceding decades applies (Figure 22). By this time in England, however, newer planning ideas were being introduced by leading architects in relatively large houses. At Scarisbrick, for example, where the remodelling and extension of the existing Georgian house began in 1837, Pugin revived the medieval great hall (see Chapter 6). A few years later in his own house, The Grange of 1841–3 at Ramsgate,[4] by no means a mansion in size or scale, the more modest two-storey hall incorporates the staircase and also provides, with the galleries above, the central core of communication. Parallel with these examples, which were of Gothic inspiration, Barry at Highclere adapted the glass-roofed central *cortile* of the Reform Club to domestic use, associating with it the main staircase rising in a contiguous vertical space.

At the hands of High Church architects the parsonage, by definition no mansion but a modest free-standing gentleman's residence, was also undergoing a characteristic development. No longer Tudor, of course, it was still not forced to be archaeologically Decorated in its planning, since there were few if any relevant medieval models to imitate. The doctrine of 'realism' condemned the shabby construction and careless use of materials that had too often been characteristic of Picturesque house-building in the previous decades, while the need for economy discouraged the ornamentation common on contemporary churches.

Such a vicarage as that which Butterfield built in 1844–5 to go with his 'first' church, St Saviour's at Coalpitheath, Gloucestershire, is a model of simple masonry construction. In the random ashlar walls are set wide banks of plain mullioned windows, Gothic only in the arching of their heads, where they can serve best to light the various rooms (Plate 122B). The massing also is irregular yet orderly with several high gables, a porch, many tall chimney stacks, and a broad bow-window elaborating the basically rectangular block. But, in the language of the ecclesiologists, 'the true Picturesque derives from the sternest utility', and so all these projecting features were such as could be readily justified functionally, like the ritualistic articulation of contemporary churches. The plan of Butterfield's vicarage has the virtues of those of the Picturesque Tudor Parsonages in the variety of room-sizes and shapes provided and also in the opportunities that the windows offer to enjoy surrounding nature. There is also at Coalpitheath a very modest version of Pugin's stair-hall at The Grange, not a mere lobby but a central space designed for easy horizontal and vertical communication.

Any serious revival of medieval craftsmanship in masonry was all but impossible in America; in any case it was largely irrelevant in a land where most houses were built of wood. But in reaction to the white-painted clapboards and the smooth Grecian trim of the previous decades, echoing however humbly the marble of Greece, Downing in the early forties proposed and many at his behest adopted variant treatments for the exterior sheathing of Picturesque villas and cottages that were rather more expressive. The distinguished native craftsmanship evident in the more monumental edifices of

the Greek Revival executed in fine ashlar of granite or other light-coloured stone, or else in smooth red brick, died out. Such materials had no more appeal than did crisp white-painted wood to a generation indoctrinated with the Picturesque point of view. Yet clapboards remained the usual surfacing material for wooden houses, even if they were now painted, not white, but in the stony hues – grey or beige – that Downing recommended in his books with actual coloured samples.

The treatment Downing preferred was board-and-batten.[5] This he made a constituent element of the very original Bracketted mode that he offered as an American alternative to the imported Italian Villa and Tudor Parsonage which he was energetically engaged in nationalizing. Board-and-batten provides a stronger pattern of light and

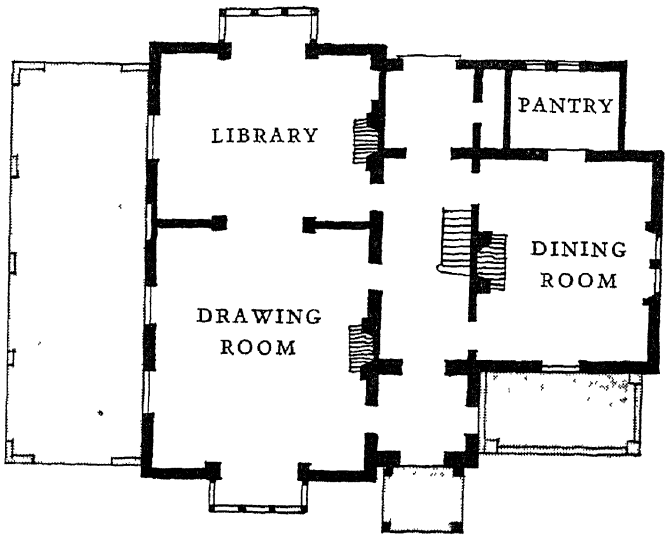


Figure 22. A. J. Downing: house-plan
(from *Cottage Residences*, 1842)

shade, and also the verticalism that appealed increasingly to mid-century taste. This sheathing also offers a sort of symbolic expression of the light 'balloon-frame' [6] construction that was beginning to come into general use by the fifties, though this method of wooden framing was apparently never known to Downing, since he died in 1852 before it reached the eastern states where he lived and worked.

With their board-and-batten walls, their ample verandas, and their bay-windows, what are still usually called 'Downing houses' constitute a largely original American creation in spite of the frequent use of Tudoresque detail on barge-boards and veranda supports and even of elaborately moulded terracotta chimney pots. Yet in their planning the houses designed by Downing and his architect friends Davis and Notman do not advance much beyond the models published in the English books of the previous decades that were their immediate prototypes (Figure 22). The verandas are usually wider and more prominent, however, and the front and rear parlours are likely to open into one another, as sometimes also into a modest central hall.

In America as in England, the Picturesque period came to no sudden end. The recurrent publication of Downing's books even after the Civil War [7] indicates how long his models remained favourites with American builders and their small-town and suburban clients. However, even before the Civil War a mansarded Second Empire mode was beginning to become popular (see Chapter 9). With the wide acceptance of this and of the High Victorian Gothic there developed a rather sharp split between autochthonous and imported types of house-design, drastically though the imported types were usually Americanized outside the bigger eastern cities. To this situation we must return later.

Something has already been said of the major turn that took place in the development of the English house around 1860 (see Chapters 9 and 12). When seen in relation to the parsonages that his master Street and also Butterfield had been building in the previous fifteen years, Webb's Red House built in 1859–60 for William Morris is considerably less revolutionary than has sometimes been supposed. Had this been built in Gloucestershire rather than in Kent, it would certainly have been of stone like Butterfield's Coalpitheath Vicarage; as it is, the entrance porch is no simpler or less Gothic than Butterfield's. The particular window forms, moreover, can be matched in Butterfield's Clergy House and School at All Saints', Margaret Street, and the somewhat rustic ease of composition in his secular work at Baldersby St James. Yet the planning is highly individual, suited to the special needs of a client who was an artist and a writer, not a parson.

The next house that Webb built, now known as Benfleet Hall, Cobham, begun in 1860 for the painter Spencer Stanhope, has been less publicized, and it never had the rich furnishings that Morris and his associates designed and executed for the Red House. Yet it is perhaps more significant in the general history of the Anglo-American house. There is here, for example, a small stair-hall of the order of Pugin's at the Grange or Butterfield's at Coalpitheath around which the other ground-storey rooms are loosely grouped. The particular character of the plan can, in fact, best be matched at Hinderton, a small country house in Cheshire that is hardly more of a mansion than Benfleet, which Waterhouse built in 1859. This house is in Waterhouse's gawkiest High Victorian Gothic, with none of the simplicity and delicacy of Webb's early houses. It is rather unlikely that Webb was actually emulating it, but the plan was twice published,[8] and hence soon known abroad.

Webb's next house, Arisaig in Inverness-shire, was begun in 1863. Built of local stone, it is somewhat more conventionally Gothic externally; moreover, it is of country-house size, a mansion rather than a modest artist's dwelling like the Red House or Benfleet Hall. The plan has two major aspects of interest; the two-storeyed hall, with gallery above, occupies a central position and the principal rooms on both storeys are very efficiently grouped about it within the bounding rectangle of the main block of the house (Figure 23). In other words, Arisaig's hall seems to derive as much from the High-clere sort of glazed central court as from Pugin's revival of the medieval great hall.

Cloverley Hall, which was built by Nesfield and Shaw in 1865–8, attracted much favourable contemporary attention largely because of the superb craftsmanship of the

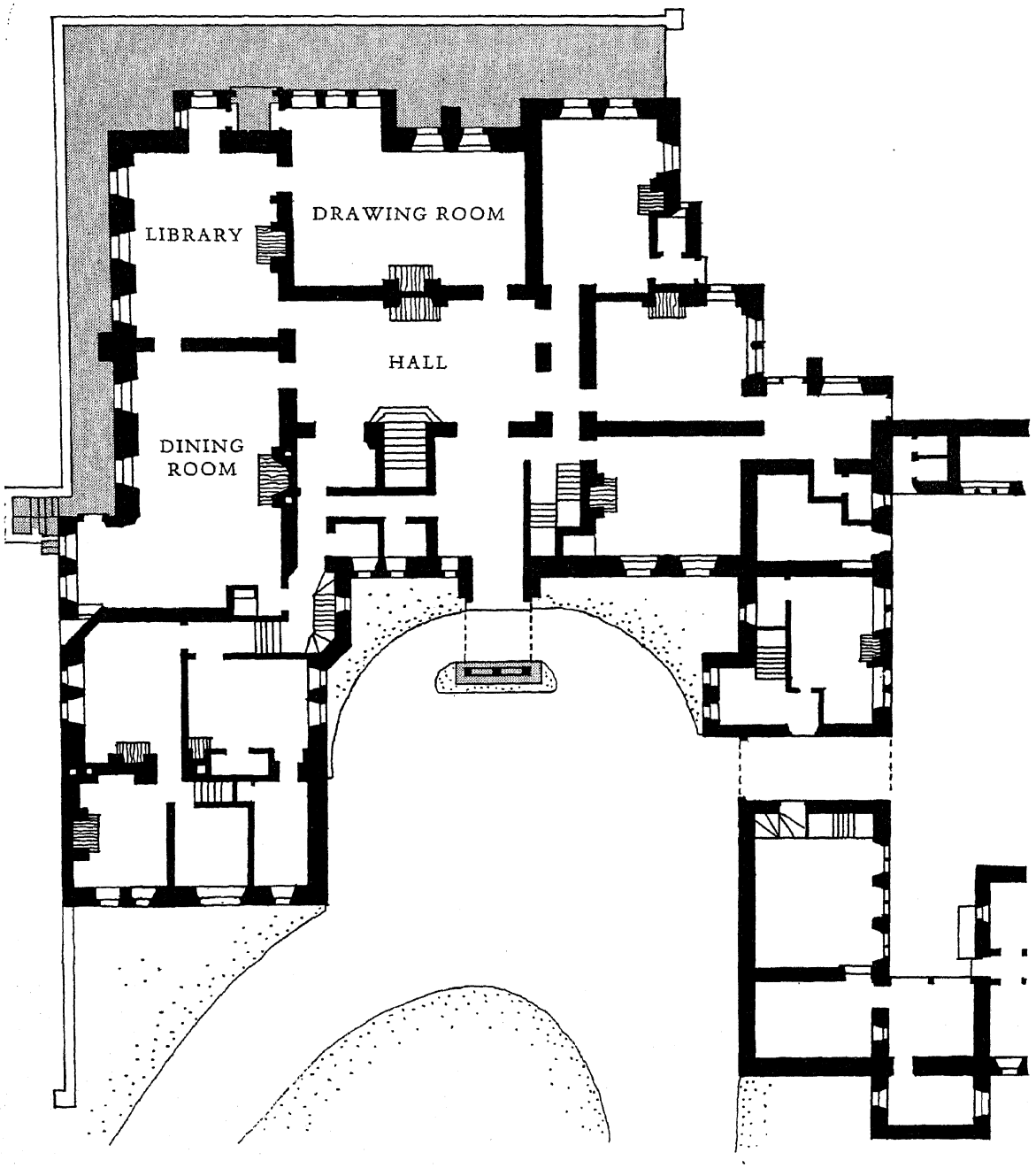


Figure 23. Philip Webb: Arisaig, Inverness-shire, 1863, plan

brickwork and the originality of the *japoniste* ornament (see Chapter 12). It is destroyed now except for the extensive service and stable wings and the gate lodge; but the amount and the character of the fenestration, providing in some areas what amounted to window-walls of stone-mullioned and transomed lights, and the character of the plan make it still memorable. It was also the first of the many notable Late Victorian manor houses which both Nesfield and Shaw would build when working alone.

Like Arisaig, Cloverley was a large country house. The medieval great hall, first rather modestly revived by Pugin at Scarisbrick, here returned at full scale; but it was placed in a corner of the main block – as was occasionally its position in the sixteenth century – so that it might receive light from one end as well as from the side (Figure 24). From the entrance, however, one passed by this hall through the 'screens' under a gallery to arrive at a stair-hall, more in the manner of Waterhouse's and Webb's, around which the other principal rooms were compactly grouped. There was also here a very skilful play with levels, the hall being lower than the rest of the main floor, and therefore part-way down to the basement – containing a billiard room and so forth – which was entirely above ground at the rear of the house.

While Cloverley Hall was still in construction, Shaw had begun his own personal career as a house-builder at Glen Andred in 1866–7 (Plate 102B), where he introduced a more vernacular manner (see Chapter 12). Following this came his Leyswood in 1868–9, a mansion as large as Cloverley Hall and in some of its decorative features more archaeologically Late Medieval. As at Cloverley Hall, the amplitude of the fenestration, however, arranged here in long mullioned bands as well as in tall window-walls, has seemed more significant to posterity than the stylistic detailing [9] (Plate 123). Above

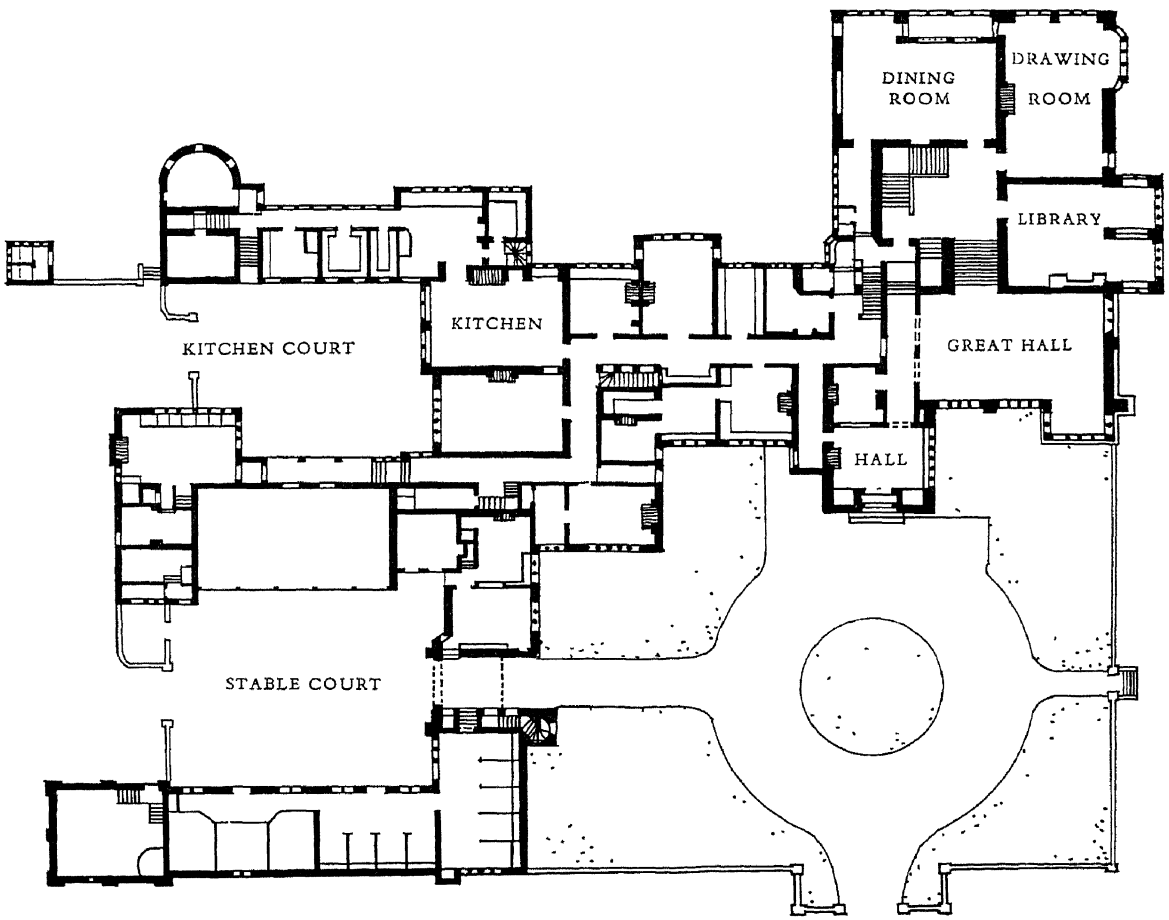


Figure 24. Nesfield & Shaw: Cloverley Hall, Shropshire, 1865–8, plan

all, Leyswood marked a further stage in the development of the 'agglutinative' plan (Figure 19), of which the first well-publicized example was Waterhouse's at Hinderton. Here the great hall and the stair-hall of Cloverley are combined to form a central spatial core of communication, somewhat as at Webb's Arisaig, but the shape of this is quite irregular and the reception rooms are grouped very loosely about it, more as at Benfleet Hall. Projecting well out of the main block, the dining-room and the drawing-room both receive light from three sides. Moreover, the space of these rooms is articulated, as in certain Picturesque houses of forty and fifty years earlier, by ingle-nooks, oriels, and various other irregularities. Perspectives of Leyswood – not the plan [10] – were

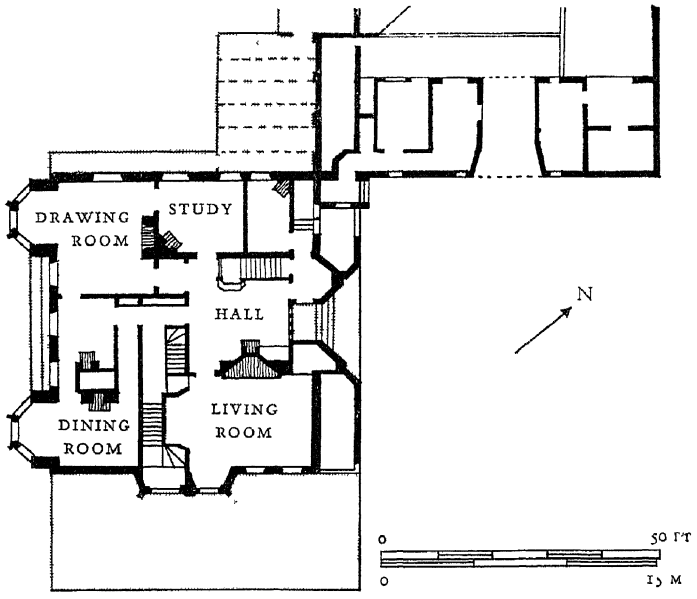


Figure 25. Philip Webb: Barnet, Hertfordshire, Trevor Hall, 1868–70, plan

published in the supplement to the *Building News* of 31 March 1871 and made at once a tremendous impression both in England and in America (Plate 123).

In a house by Webb of the same date as Leyswood, Trevor Hall at Oakleigh Park, Barnet, in Hertfordshire, the arrangement of the rooms about the central hall was much more compact (Figure 25). The whole formed a square and allowed a quite symmetrical treatment of the three principal fronts. This house is now destroyed except for the gate lodge. Less interesting in plan but significant for its very modest size is Webb's Upwood Gorse at Caterham in Surrey, built for Queen Victoria's dentist John Tomes also in 1868. The consistency and the simplicity with which the local vernacular of brick below and tile-hanging above is handled in connexion with plenty of white-painted Queen Anne sash-windows regularly but not symmetrically spaced offers a curiously close prototype of the American 'Shingle Style', although the initiators of that mode a decade later can hardly have known of this house, since it was never published. It was rather Shaw's houses of the next decade, of which his drawings were

exhibited each year at the Royal Academy and given great prominence in the professional Press, that provided the exemplars which architects generally imitated both at home and abroad; from 1874 on the plans were usually illustrated as well as Shaw's own very virtuoso pen-drawn [11] perspectives (Plate 123).

Webb's houses for the painters Val Prinsep and G. B. Boyce in Kensington and Chelsea, of 1865 and 1869 respectively, were the first English 'studio-houses' – houses, that is, in which the studios, naturally equipped with very large windows, were the principal rooms. These provided a more livable alternative to the great halls that Shaw generally provided in his country houses; but it was the larger artists' houses of the seventies and eighties which Shaw built for his fellow academicians that received more contemporary publicity.

By the mid seventies Shaw was moving in the formal and symmetrical direction initiated by Webb at Trevor Hall and soon carried much further by Nesfield at Kinmel Park as regards both the planning and the external organization of his larger London houses. Lowther Lodge in Kensington Gore of 1873–4 is the first of his domestic commissions that may properly be called Queen Anne rather than Manorial. The even more formally designed Cheyne House and Old Swan House, of 1875 and 1876 respectively, on the Chelsea Embankment followed shortly after (Plate 103); but he long continued to build more loosely composed houses in the country, as has been noted earlier.

Before turning to the results of Shaw's very notable influence in the United States in the seventies, something should be said of the situation there in the preceding decade. The Second Empire mode had been increasingly popular for houses from the mid fifties and was especially fashionable during the boom period that followed the Civil War. It had no positive contribution to make to the general Anglo-American development in these decades, however. In the domestic field more or less Gothic modes were its significant rivals; first Downing's wide veranda-ed version of the Tudor Cottage; then, after 1860, what Vincent Scully has christened the 'Stick Style'.[12]

In houses in this mode, which is really hardly Gothic at all, a sort of imitation half-timbering panels the exterior walls, suggesting, like Downing's board-and-batten sheathing, the underlying wooden stud-structure of balloon-frame construction. This construction came to be generally used in the East as well as in the Middle West, where it originated, after it had been explained by William E. Bell in his *Carpentry Made Easy* in 1858. More striking is the open stickwork of the ubiquitous verandas. This can be seen in an early form on the Olmsted house in East Hartford, Conn., of 1849 by the English architect Gervase Wheeler,[13] who obviously derived it from Picturesque models in England dating back at least to the thirties. In the J. N. H. Griswold house of 1862 in Bellevue Avenue in Newport, R.I., by the French-trained Hunt, now the Newport Art Association, the 'sticks' of the wall surface are so sturdy that they may well be the actual framing members.

Most characteristic of the maturity of the mode is the Sturtevant house at nearby Middletown, R.I., built by Dudley Newton (1845?–1907) a decade later in 1872. Here the gawky vigour of the Stick Style, its intense woodenness, and its descent from several different Picturesque modes – not least the Swiss Chalet – is very evident (Plate 124A).

Extensive surrounding verandas are of the very essence of the mode; but the internal planning, while informal and often asymmetrical, is rarely very open. Several books by Eugene C. Gardner (1836–1905) [14] of Springfield, Mass., give a sophisticated architect's rationale of the mode. But the exemplars that G. E. Woodward [15] offered in the sixties are more typical, and were more widely imitated in actual production; for the Stick Style had almost run its course by the time Gardner began to present his excellent house designs. Woodward was no architect, and for the most part the Stick Style should not be considered an architect's mode. It represented rather a popular attempt, remarkably successful for a few years, to create an American domestic vernacular, suited to the materials in general use and to the current methods of building, comparable to Downing's earlier Bracketted mode. Like the Second Empire vogue the Stick Style died out, at least in the East, during the general hiatus in building production after the financial Panic of 1873.

By that time Shaw's influence had begun to reach America.[16] Moreover, the possibilities of 'agglutinative' planning about a great hall had been realized by Richardson well before a Shaw plan – that for Hopedene – was first made available in the *Building News* in 1874. It is, of course, possible that McKim, in passing through England on his way home from Paris in 1870, had seen (or merely heard of) the character of Webb's, Nesfield's, and Shaw's houses of the sixties and transmitted that information to Richardson.

An undated project of about 1870 by Richardson for a house to be built in Newport, R.I., for Richard Codman includes his first great hall [17] of the Shavian sort; but the Codman plan is already in advance of, or at least rather different from, those of Shaw. This hall, out of which the stairs would rise in an L at the rear, was to be very large in relation to the other rooms, and thus definitely a principal living area not a mere foyer or centre of circulation. The drawing room and dining room were to open out of the hall through wide doorways so that some sort of spatial continuity would have extended through all the reception rooms of the ground storey. There was to be a large veranda at the side in the well-established local tradition. The exterior as shown in the elevations is not at all Shavian but rather related to the Stick Style, like Richardson's own house at Arrochar on Staten Island of 1868.

Richardson's first executed country house, the F. W. Andrews house of 1872–3 at Newport, R.I., was much more Shavian in plan. Four or five rooms were grouped about a relatively smaller central stair-hall and most of these were articulated by bay-windows and ingle-nooks. But the main block was also surrounded by verandas, features which are rare and always of modest extent on Shaw's houses. The Andrews house was burned a long time ago, but from the existing elevations it would appear that the external treatment represented a sort of transition between the Stick Style, then at its apogee, and Shaw's Surrey vernacular translated into American materials. The verandas were still detailed in a Stick Style way, and flat stickwork interrupted the continuity of the wall surfaces; but the clapboarding of the lower walls evidently took the place of the brickwork Shaw used – it was almost certainly painted red – and the wooden shingling of the upper walls was a happy substitute for English tile-hanging. Shingles were, of course, an old though largely forgotten American sheathing material long used only on roofs.

By the time Richardson came to design his next large house, that for William Watts Sherman on Shepard Avenue in Newport in 1874, the perspectives of several of Shaw's manors had appeared in the *Building News* and the plans of two. As a result, probably, of his assistant Stanford White's Shaw-like skill with the pencil, the Sherman house was notably Shavian externally. Above the ground storey, which is of Richardsonian random-ashlar masonry in pink Milford granite with brownstone trim, the walls and the high roofs are covered with shingles cut in various decorative shapes suggested by those of Shaw's tile-hanging. Many of the casement windows are grouped to form window-walls in the ground storey and arranged in long horizontal bands above. The half-timbering of the front gable, with painted decoration on the intervening plaster, was taken straight from Shaw's Grim's Dyke; the carved ornament on the barge-boards is almost Nesfieldian in its suggestion of *japonisme*. Thus the whole is as perfect a specimen of Shaw's Manorial mode as anything any architect other than he or Nesfield ever produced in England. The house has since been much enlarged, partly by White in 1881, partly by Newton very much later, but always with due respect for the character of the original design.

The plan has more of the independent virtues of that of the Codman project. The hall provides a principal portion of the living area, and the other main rooms open into it through wide doors; thus there is some flow of space throughout the whole original block. The original library at the rear corner, later replaced by a large ballroom, ended in a Shavian rounded bay with a continuous window band, a feature Wright would copy later. Yet otherwise the house was less articulated than Shaw's earlier ones, having rather the compactness though none of the symmetry of Webb's Trevor Hall.

The mid seventies saw many other American reflections of Shaw's Manorial mode and soon of his Queen Anne also, none of them so successful as the Sherman house. But the deep business recession that followed the Panic of 1873 led to a general mood of repentance after the extravagances, architectural and otherwise, of the post-war boom. From the resultant nostalgia for the simpler ways of the American past there began to develop at this time a great interest in the houses of the Colonial period, an interest that readily merged, however, with the current English preoccupation with the vernacular of the seventeenth and eighteenth centuries. To an extent difficult for posterity to appreciate, the nascent 'Shingle Style',[18] which crystallized towards the end of the decade with the revival of building production, was to its protagonists already a sort of Colonial Revival. Although its origins are partly Shavian, it represents above all a reaction, as did Shaw's Manorial mode in England, against the 'modernism' of the High Victorian Gothic and the Second Empire, now grown thoroughly unfashionable except in the West.

Boston was still the architectural metropolis of the United States, and it was around Boston, especially in the work of Emerson and Little, the latter a serious early student of old Colonial work, that this crystallization of the Shingle Style first took place (see Chapter 13). But it was at once taken over and given a somewhat more Shaw-like elaboration by the New York firm of McKim, Mead & White, formed in 1879. From the early eighties, and for over a decade, the Shingle Style was widely practised by architects

from coast to coast, and not least happily in the Far West. The characteristic use of shingles as an all-over wall-covering emphasized the continuity of the exterior surface as a skin stretched over the underlying wooden skeleton of studs, in contrast to the way the preceding Stick Style had echoed that skeleton in the external treatment. The shingles properly provide the name for a most characteristically American domestic mode; but it was in planning that American architects made the really original contribution in what was the most significant development of the detached house since the Picturesque period.

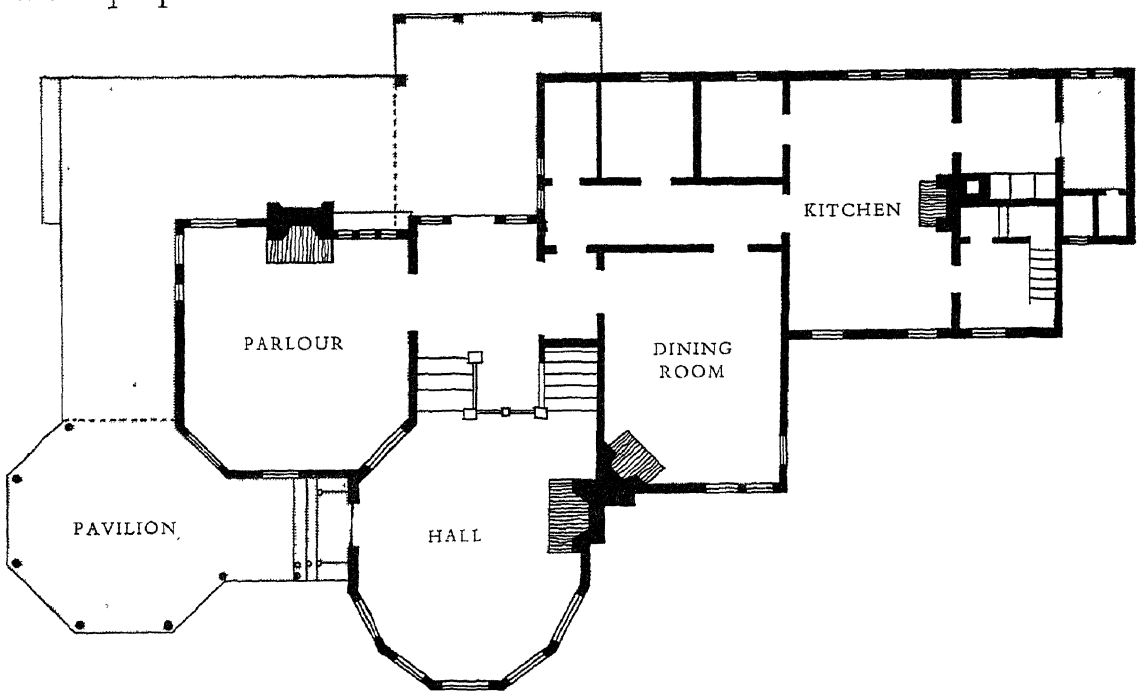


Figure 26. W. R. Emerson: Mount Desert, Maine, house, 1879, plan

One of the first mature examples of the Shingle Style, a house built by Emerson on Mount Desert in Maine in 1879, well illustrates the virtuosity of the new planning (Figure 26). Rooms of varied shape and size are loosely grouped about the hall and open freely into one another. The various levels of the different areas are related to the landing levels of the elaborate staircase. Above all, it should be noted that the verandas are not mere adjuncts or afterthoughts, as they were even on Richardson's Andrews house, but major elements, both space-wise and visually, of the whole composition. Such houses parallel in their three-dimensional complexity the massing of the Italian Villas of the earlier nineteenth-century decades with their loggias, pergolas, and prospect towers, yet they bear little or no visual resemblance to them, since the later houses are always much more sculpturally plastic and less articulated in composition. The windows are generally of double-hung small-paned sashes of a type at once Queen Anne and Colonial, but they are frequently grouped in the Shavian way, as well as being ingeniously placed in order to vary the internal lighting effects, so that the pattern of fenestration is not at all of an eighteenth-century order.

Richardson certainly did not initiate the Shingle Style; but he took it over in 1880 and made it very much his own, using it for all his later country and suburban houses. Dropping all detail, whether Richardsonian Romanesque, Shavian Manorial, Queen Anne, or American Colonial, he retained much of the ease and casualness of Shaw's best early houses. But there is also a great deal of similarity to the simple massive effects of the old Colonial houses also. Spiritually, so to say, if not so much visually, Richardson's shingled houses most resemble Webb's best work; of these Richardson presumably had no knowledge, although it is just possible that he might have seen some when he was in England in 1882, well after the Shingle Style was fully established.

Richardson's Stoughton house in Brattle Street in Cambridge, Mass., of 1882–3 is perhaps his best shingled one, at least in the relatively untouched form in which it, almost alone, alas, has come down to us (Plate 124B). It certainly shows little evidence of the interest that he is known to have taken in Burges's and Shaw's work while he was in England in 1882. The entrance, originally, was through the loggia recessed into the main mass of the house (it is now from Ash Street on the left). The living-hall extends, like that of the Sherman house, from front to back and the stairs sweep up in a half-circle over the entrance. The drawing room at the corner and the dining room behind the loggia both open into the hall through wide doors; only the small library is isolated from the general flow of space. Externally, the shingled surfaces, broken only by banks of double-hung windows, model the complex mass into a unified composition, the almost submerged stair-tower successfully linking the two gabled wings at right angles to one another by its rounded form. There is no ornament of any sort, and the weathered grey of the shingles is varied only by the dark-green paint of the window sash.

McKim, Mead & White's houses of the early eighties, several of them equally fine, are usually rather more elaborate in their massing and are likely to be enlivened with much imaginative detail.[19] Some of the detail recalls this or that style of the past, but all of it is thoroughly personalized by White's delicate hand. One of their best houses is the one for Isaac Bell, Jr, built in 1881–2 in Bellevue Avenue in Newport, R.I. (Plate 126). This is less unified externally than the Stoughton house but more open in plan (Figure 27). A wide veranda, with very elegant bamboo-like supports, extends around two fronts, expanding into a two-storeyed open pavilion on the right. This pavilion provides a semicircular void to balance the round tower at the rear left corner. The patterns of the original cut shingles on this house, although obviously suggested by English tiling, are much softer and more graceful, almost bringing to mind birds' plumage.

Inside, the hall is articulated by a wide ingle-nook, rather dark and low, in sharpest contrast to the great flight of stairs beyond down which floods light from the window-wall at the half landing. Twenty-five-foot sliding doors, hung from above, make it possible to open the drawing room through almost its entire length into the hall. The Bell dining room, connecting at its end through French windows with the curved portion of the veranda, has some of the finest of White's orientalizing detail. This is more original even than that in the new library he decorated at this time in the Sherman house or the dining room he added to Upjohn's Kingscote, both also in Newport.

McKim, Mead & White's slightly earlier H. Victor Newcomb house of 1880–1 in Elberon, N.J., is at once clumsier and more Shavian externally than the Bell house; but the spatial treatment of the living-hall is most original and very significant for later developments (Plate 125A). The main rectangular space, of which the shape is emphasized by the ceiling beams and by the abstract geometrical pattern of the floor, seems to flow out in various directions into other rooms and into several bays and nooks; but the actual room-space is sharply defined by a continuous frieze-like member that becomes an open wooden grille above the various openings. There can be little question

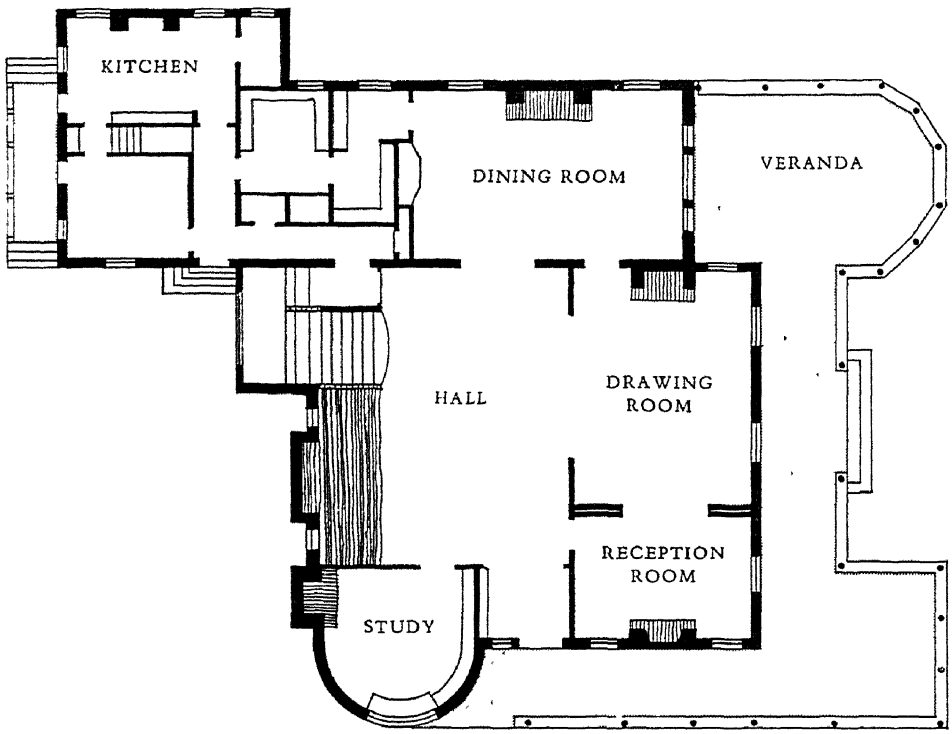


Figure 27. McKim, Mead & White: Newport, R.I., Isaac Bell, Jr, house, 1881–2, plan

that the major influence here is from the Japanese [20] interior, but from the Japanese interior understood as architecture. This is not just a superficial matter of Nesfieldian *japonisme* such as White was employing so much in his ornament in these years. The Kingscote dining room has somewhat similar spatial qualities but more eclectic detailing and richer materials: marble, Tiffany glass tiles, cork panels, stained glass, etc.

In 1879 Cyrus McCormick had his Chicago mansion built by the local architect Adolph Cudell (1850–1910) and his partner Blumenthal in the form of a very corrupt Second Empire *hôtel particulier*. It is good evidence of the rapidity with which taste changed at this time that two years later he called on McKim, Mead & White to build for him in Richfield Springs, N.Y., one of the finest and most carefully composed of all their Shingle Style houses. This house is notable not only for the subtly Japanese character of the various sorts of veranda supports but even more for the way the composition is unified under the broad front gable by the long horizontal line of the veranda roof

repeating that of the stylobate-like stone wall of the terrace below. It is most unfortunate that this house is now in a state of near-collapse.

Little's contemporary Shingleside House of 1881 in Swampscott, Mass., has been mentioned already. Soberer than the Bell or the McCormick houses in its rectangular shape and almost total lack of exterior detail, this had a galleried two-storey hall with a window-wall as the principal living area. In the combining of different levels this house recalled a little Cloverley Hall, but it was completely Americanized in scale and in detail without being archaeologically Neo-Colonial.

By the mid eighties J. Lyman Silsbee (1848–1913) had introduced the Shingle Style to Chicago, and other Eastern architects were building good houses of this order in such Western towns as Cheyenne, Idaho; Colorado Springs, Colorado; and Pasadena, California. In Philadelphia Wilson Eyre (1858–1944) developed the mode with a very characteristic personal difference, often eschewing the use of shingles. If his exteriors are rather English in their frequent use of brick and real half-timbering, his plans are most original. The long rooms of varied and irregular shape are strung out on either side of halls from which rise stairs within grilled enclosures of a sort that appeared in England only in the houses of the nineties by Voysey and his contemporaries.

The heyday of the Shingle Style was brief, even though it continued in use well down into the nineties. The Colonial Revival implications, present from the first, soon encouraged more and more comprehensive use of eighteenth-century detail, and this supported the general tendency of the mid eighties in America away from the irregular and towards more formal order (see Chapter 13). Something of this change could be seen in Richardson's latest houses in masonry such as the Glessner house of 1885–7 at 18th Street and South Prairie Avenue in Chicago, which still stands, and the contemporary Mac Veagh house, long since destroyed, also in Chicago, both of which were almost symmetrical as regards their front façades. The most drastic examples, of course, of this Academic Reaction were such houses as McKim, Mead & White's Villard group in New York (Plate 109B) and their H. A. C. Taylor house in Newport with its formal Anglo-Palladian plan of central hall and four corner rooms. Despite its even tighter plan, however, their extant W. G. Low house in Bristol, R.I., of 1887 – a year later therefore than the demolished Taylor house – can properly be cited again as a masterpiece of the Shingle Style (Plate 127). This illustrates very well how the loose massing of the houses of the early eighties could be organized into a carefully balanced composition without succumbing to any historical mode of design, whether Italian Renaissance or American Colonial.

Particularly interesting in this connexion are the small houses at Tuxedo Park, N.Y., which Price designed for Pierre Lorillard in 1885–6, some years before he began to build Renaissance skyscrapers (see Chapter 14). Lorillard's own house has a rather tight plan of the Neo-Colonial sort; but the exterior with its paired chimneys on the front, a Richardsonian entrance arch between them, and the verandas and terrace treated as voids carefully related to the solid mass behind is still in the earlier tradition (Plate 125B). In such other houses by Price at Tuxedo as those for William Kent and Travis C. Van Buren, the loose open plans of the immediately preceding years were organized into T and X

patterns, and the verandas and terraces were even more formally treated as important elements in compositions made up of well-defined voids and solids (Figure 28).

This brings us to the beginning of the career of Frank Lloyd Wright, already introduced as an important coadjutor of Sullivan from 1887 to 1893. Although Wright's mature career begins only about 1900 (see Chapter 19), his apprentice years as a builder of houses provide a very significant episode that is closely related to the earlier story of the nineteenth-century house in England and America. By the late eighties a full-dress Colonial Revival was under way in the East. But it was the particular combination

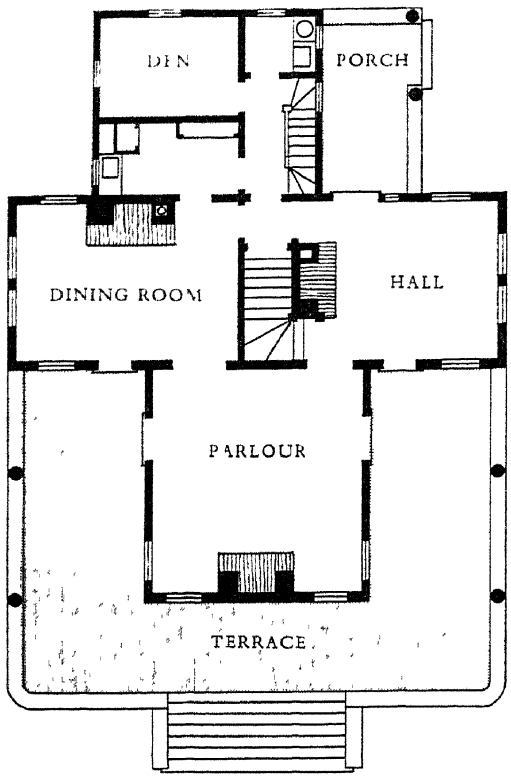


Figure 28. Bruce Price: Tuxedo Park, N.Y., Tower House, 1885–6

of freedom and order that had been achieved by Richardson in his latest houses, by McKim, Mead & White in their Low house, and by Price in his Tuxedo houses which was the immediate tradition from which Wright's domestic architecture grew far more than the work of Sullivan.

Born in 1867, Wright had had some two years in the Engineering School – there was no architectural school – at the University of Wisconsin when he came to Chicago at the age of twenty in 1887. He first found work in the office of Silsbee whom Wright's uncle Jenkin Lloyd Jones had brought to Chicago a year or two earlier to design All Souls' Unitarian Church, of which he was minister. The young architect's first work, nominally a Silsbee commission, was the Hillside Home School built in 1887 for his aunts near Spring Green, Wisconsin. This was a rather provincial specimen of a Shingle Style house and has since been demolished by Wright himself.

Shifting before the year 1887 was over to the Adler & Sullivan office, Wright by 1889 was married and ready to build a house for himself on the strength of a five-year contract with his new employers. This house, at 428 Forest Avenue in Oak Park, Ill., still extant but much pulled about, derives almost entirely from Price's cottages at Tuxedo, except that the plan is much less formal. In the interior, the wide openings between the rooms are not framed by architraves but seem to have been produced by pulling back the walls beneath the continuous frieze. In this treatment, rather Japanese in concept, Wright would seem to have been influenced by White's handling of the hall of the Newcomb house, even though that is quite Japanese also in much of the detailing and Wright's is not.

Wright's next important work is the James Charnley house at 1365 Astor Street in Chicago, built in 1891–2. This was actually a commission of the Adler & Sullivan firm, but one of which he had entire charge. A city house built of tawny Roman brick like that used for the court of the Boston Public Library, this is as formal [21] as anything McKim, Mead & White had yet designed. But there is no High Renaissance or Colonial reminiscence whatever in the external detailing. The Charnley house is rather a conscientious attempt to emulate in a modest three-storey residence the highly original design of Sullivan's newly completed Wainwright Building in Saint Louis.

Wright was also accepting various private commissions on the side, mostly very small ones, by this time. The George Blossom house of 1892 at 4858 Kenwood Avenue on the south side of Chicago, however, is of more consequence. Externally, this follows rather closely McKim, Mead & White's Taylor house in the curved Ionic entrance porch and the recurrent Palladian windows, not to speak of the use of yellow-painted clapboards and white-painted trim of simplified academic character. Even the plan is for the most part symmetrically ordered. But behind the formal range of entrance lobby and two small corner rooms at the front the whole centre of the house opens up as a single great living-hall. In this living-hall a wide ingle-nook is lined up on axis with the entrance, the elaborate staircase rises in several flights across one end, and wide openings connect with the library and the dining room. The dining room, which ends in a curved bay with a continuous window-band, is almost a copy of the original library of Richardson's Sherman house. In another Wright house of 1892, that for A. W. Harlan, also on the south side of Chicago, at 4414 Greenwood Avenue, which Sullivan happened to see, he recognized his assistant's hand and this brought about the break between the two a year before Wright's five-year contract ran out.

When Wright set up for himself in 1893 there were two paths open to him. That he actually considered following the path of Academic Reaction, so heavily publicized by the success of the World's Fair, is evident from his project of this year for a Library and Museum in Milwaukee (see Chapter 13). But when Burnham at this point offered to send Wright to Paris to study at the École des Beaux-Arts and then to the new American Academy which he and McKim were planning to start in Rome, in preparation for taking him on as designing partner, the young architect turned the opportunity down.

The W. H. Winslow house of 1893 in Auvergne Place in River Forest, Ill., always considered by Wright his 'first', shares many qualities with the Blossom and Harlan

houses, but is altogether a much more mature and original work (Plate 128A). The front is completely symmetrical and as formal as that of the Charnley house of two years before. Broad and low, of fine Roman brickwork with a rich band of moulded terracotta the full depth of the upper-storey windows below the wide eaves, the general effect of this has usually been considered very Sullivanian. But as Wright himself was responsible for the Adler & Sullivan work that this house most resembles – the Charnley house, certainly; and the Victoria Hotel of 1892 at Chicago Heights, probably – it is more accurate to consider that the Winslow house represents a continuation of his own manner of the previous year or two. The plan is more axial and less open than that of the Blossom house, the still rather Richardsonian dining room with its rounded bay being placed here at the centre of the rear. The staircase, still so prominent in the Shingle Style way at the Blossom house, is here pushed out of sight between walls.

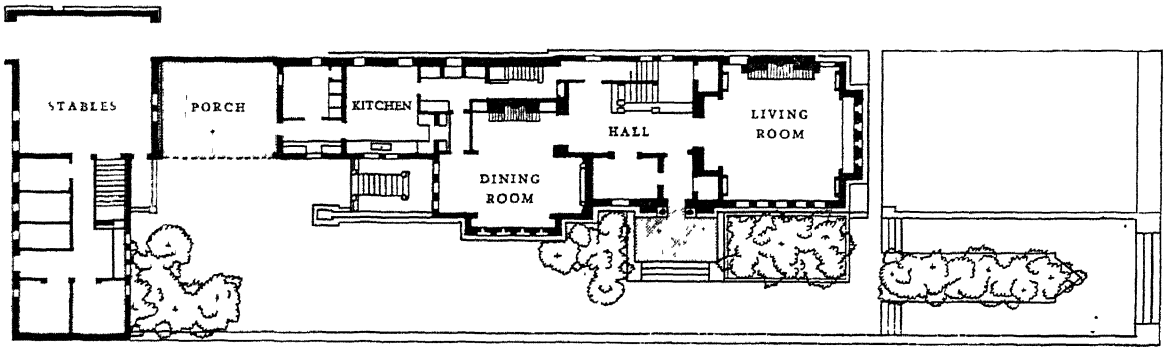


Figure 29. Frank Lloyd Wright: Chicago, Isidore Heller house, 1897, plan

Wright's next important house, that of 1897 for Isidore Heller at 5132 Woodlawn Avenue on the south side of Chicago, perhaps shows some Japanese [22] influence in the succession of eaves-lines, one above the other. It is the development of the plan, however, that is most significant, as also the effect of the planning on the treatment of the exterior (Figure 29). The two principal living rooms are linked by a stair-hall into which they both open through wide apertures – no more mere doorways than in his own house of 1889, but tall breaks in the continuity of the walls. Although these rooms have inglenooks, they are not casual and cosy in the Queen Anne way but very carefully ordered; both, indeed, are of regular cruciform shape. This shape, moreover, is given external expression in the plastic articulation of the external massing, an articulation that the multiple eaves echo above.

Two years later, in the Joseph W. Husser house, now destroyed, in Buena Park on the north side of Chicago, Wright's personal development of domestic planning was carried much farther (Figure 30). Here the main living rooms were all raised to the first storey in order to have a good view of Lake Michigan, and the interior space was continued uninterrupted along the main axis of the house from the dining-room fireplace across the landing and through to the living-room fireplace. But the dining room was also articulated along a cross axis, extending outward into a large polygonal bay facing the

lake, somewhat like the more Richardsonian bays of the Blossom and Winslow dining rooms.

Between the two houses just described, in which Wright's planning developed so rapidly and so boldly towards unified but articulated space, came the River Forest Golf Club in River Forest, Ill. The front wing of this, built in 1898,[23] showed a comparable maturing of his vocabulary of wooden construction. The two Chicago houses were both of brick with rather lush Sullivanian terracotta decoration below the eaves not unlike that on the Schiller Building. At the Golf Club the characteristic feeling of the Shingle Style for rough natural wood surfaces was revived by Wright but made more architectonic in scale. Below continuous window bands protected by his characteristic

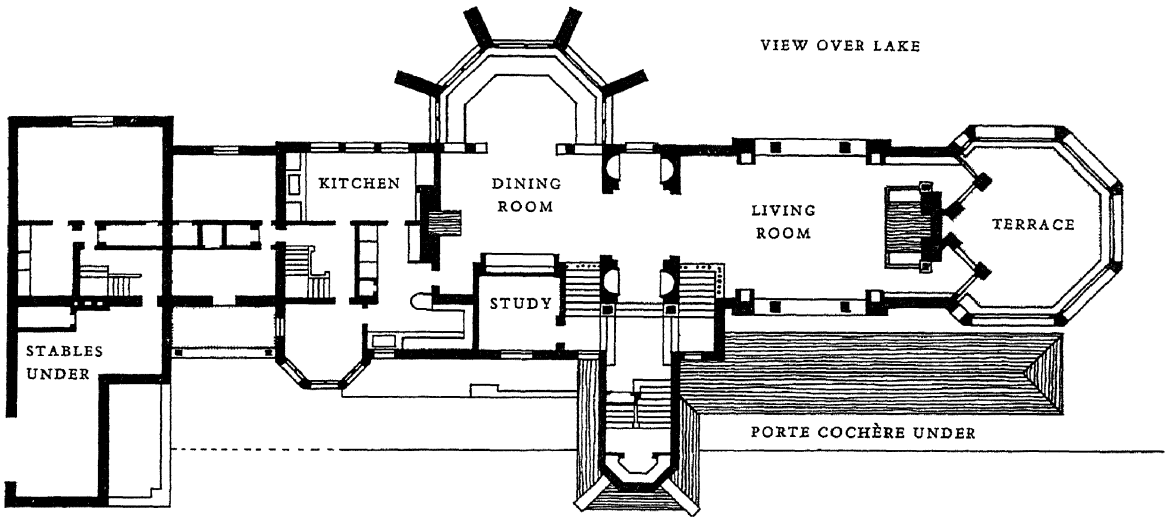


Figure 30. Frank Lloyd Wright: Chicago, J. W. Husser house, 1899, plan

hovering eaves, the lower walls and the terrace parapets were sheathed with boards and battens, not applied vertically as by Downing, but horizontally. Uncovered terrace, covered veranda, glazed foyer, all were closely related spatial areas, the last two unified by the continuous roof. The only solid element was the broad stone chimney marking the point where the main axis and the subsidiary axis of the low side-wings crossed. In 1901 the building was much enlarged by Wright, but quite in the original spirit (Plate 128B).

In 1900, the last year of the nineteenth century, with which this account of Wright's beginnings may properly close, he built two houses side by side in Kankakee, Ill. He also designed for the *Ladies Home Journal* 'A Home in a Prairie Town' which was published in February 1901. The larger of the two Kankakee houses, that for B. Harley Bradley at 701 South Harrison Avenue, is a large, loosely cruciform composition with low-pitched gables projecting in blunt points well beyond the ends of the wings. The smaller Hickox house, next door at 687 South Harrison Avenue, has a more advanced plan under similar roofs. Wood stripping suggests the stud structure underneath the stucco of the walls as do also, and rather more directly, the wooden window mullions

(Plate 142A). The living room here, flanked by semi-octagonal music and dining rooms, extends across the 'garden front' and opens by french doors on to the uncovered terrace (Figure 31). Here the articulated but unified space of the Husser house was reduced in scale and simplified until it provided a quite new concept of domestic planning, later to be widely influential internationally (see Chapter 22). Towards that new concept much of the development of the Anglo-American house since as far back as the 1790s may seem – not too exaggeratedly – to have been tending.

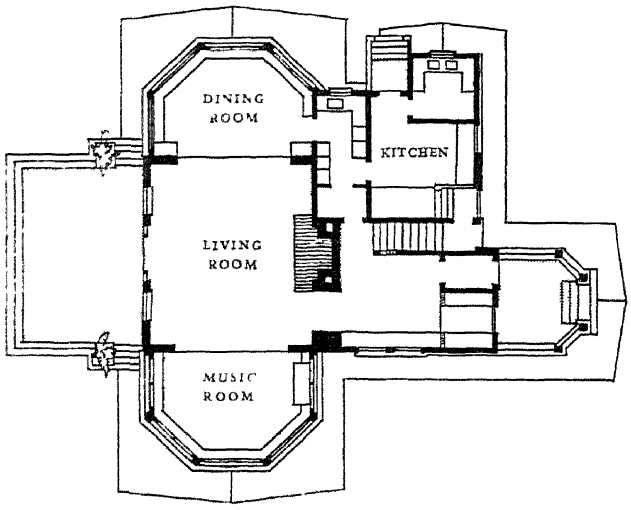


Figure 31. Frank Lloyd Wright: Kankakee, Ill., Warren Hickox house, 1900, plan

The *Ladies Home Journal* project for a 'House in a Prairie Town', from which the term 'Prairie Houses' for Wright's characteristic production of the next decade derives, is larger than the Hickox house, but the living area was intended to be very similarly unified and articulated. In one version Wright even proposed carrying this space up two storeys in the centre, somewhat like one of Shaw's Manorial halls. As on the River Forest Golf Club, the long lines of the low hip roofs shelter very long window-bands – out of Shaw, via Richardson, presumably. Although the *Ladies Home Journal* house was intended to be stuccoed like the Hickox house, the window mullions echo the underlying wooden stud structure. As at the Golf Club, the chimneys would be the only really solid elements, passing up through the crossing volumes defined by the two levels of roof. The lower line of eaves extends, somewhat as on McKim, Mead & White's McCormick house, over the *porte-cochère* on one side and over the veranda on the other, a treatment Wright had already tried out rather more clumsily on the Bradley house.

In considering the significance of these Wright houses of 1900 it must be recognized that even in America they were highly exceptional. Despite the fact that the 'Prairie house' project was published in a general magazine of national circulation, its immediate influence was very slight indeed. For all the vigour of the two great Chicago achievements of the nineties, Sullivan's skyscrapers and Wright's earliest houses, the main direction of American architecture in 1900 was quite different. So also in the England of

these years, where Shaw's house for Fred White and his Bryanston had introduced by the nineties almost the same sort of Academic Revival as had McKim, Mead & White's Villard and Taylor houses, the work of Voysey, the English architect most comparable to Wright, was also almost as exceptional. The line of architectural development had already split as sharply as in America, with the difference that the longer-lived Shaw himself took the lead in the academic direction which Richardson's pupils, McKim and White, had taken in America.

Although Charles Francis Annesley Voysey (1857–1941) [24] was ten years older than Wright, it is understandable with English conditions that his architectural career got under way little earlier. From 1874 to 1880 he worked as a pupil in the office of Seddon; from 1880 until he set up for himself in 1882 he was assistant to Devey.[25] In 1883 Voysey sold his first designs for wallpapers and printed fabrics, but for several more years he did little building. His first house, The Cottage at Bishop's Itchington in Warwickshire, was built only in 1888; in the next two years various projects of his, increasingly original in character, were published in the *British Architect*; of these the one for a house [26] at Doverscourt of 1890 was the most advanced.

By the late eighties Nesfield and Godwin were both dead and leadership in English architecture, particularly as regards the domestic field, rested more firmly than ever in Shaw's hands. The forces of innovation in English art were concentrated in the decorative field, thanks in considerable part to Webb's activities with the Morris firm. But there is some question how well younger men like Voysey really knew Webb's architectural work; almost none of it was published, and some of the best is hidden in remote parts of Scotland and the North of England. The work of A. H. Mackmurdo (1851–1942) was perhaps somewhat better known, but he was much more active with furniture, chintzes, and wallpapers than with building in the eighties. A project for a 'House for an Artist' that he published in his magazine *The Hobby Horse* in 1888 was of considerable promise, however. In any case Voysey soon rivalled Mackmurdo as a designer of furniture, wallpapers, and chintzes, and quite outclassed him as an architect. Mackmurdo's most significant influence was probably abroad (see Chapter 16).

The existence of an earlier project dated 1888 for Voysey's house for J. W. Forster at Bedford Park has led to some confusion. The executed house dates from 1891. Sometimes known as the Grey House, it is very different indeed from its neighbours, by this time some fifteen or more years old, by Godwin, Shaw, and their pupils. For one thing, its walls are covered with roughcast, already used by Voysey on The Cottage at Bishop's Itchington; for another, it is a three-storey rectangular box, severe and rather formal beneath its low hipped roof, not quaint and irregular like even the simplest of the earlier houses. The casement windows are arranged in bands between stone mullions, regularly but not symmetrically, and the eaves troughs are supported by delicately curved iron brackets. Otherwise there is no external detail.

The plan of the Forster house is also compact and regular, with entrance on the left side and living room across the front. In other words this house represents as much of a reaction against the picturesqueness of the earlier Queen Anne as does Shaw's Fred White house, yet is quite without eighteenth-century reminiscence.[27]

More interesting and more prominent than the contemporary storey-and-a-half house known as The Studio at 17 St Dunstan's Road in West Kensington are a pair of terrace-houses, also designed in 1891 but begun only the next year, at 14–16 Hans Road off the Brompton Road in London. Here Voysey dropped the roughcast he had originally proposed and used Webb-like red brickwork with the windows characteristically arranged in bands between plain stone mullions. The elegantly original detailing of the projecting stone porches and the curved line of the parapets at the top are related to his contemporary decorative work and in notable contrast to the almost 'Monumental Queen Anne' treatment of Mackmurdo's slightly later house next door at No. 12.

A moderate-sized country house, Perrycroft, Colwall, near Malvern, begun in 1893, may be considered Voysey's first mature production, introducing in executed work the personal mode of design for which the Ward project of 1890 had already shown the way, and from which he never moved very far in later years. This is comparable, not to Wright's 'first' house in River Forest of the same date, but to his more advanced work of the end of the decade, the River Forest Golf Club and the Hickox house. Roughcast walls, windows arranged in bands between plain mullions,[28] a regular composition approaching but not quite reaching symmetry, these all follow from the Grey House and the Studio. But, being in the country, the house could spread out more. Moreover, the roofs were raised to a medieval pitch – 45 degrees – so that their conspicuously heavy slating is as much a part of Voysey's simple craftsman-like mode as are the off-white roughcast walls. The planning is closer to Webb's than to Wright's, the rooms being less symmetrically shaped and not opening at all into one another in the way of the Ward project.

A rather larger house, begun in 1896 on the Hog's Back near Guildford in Surrey for the American Julian Sturgis, presumptive original of Santayana's *Last Puritan*, has a somewhat less balanced composition with a prominent cross gable near one end (Plate 129A). The characteristic stone-mullioned lights of several of the rooms are here so extensive in their grouping as to constitute window-walls of the earlier Shavian sort.

In what is doubtless Voysey's finest work, Broadleys on Lake Windermere, designed in 1898, the roofs are lower once more, and the window-walls are concentrated in three rounded bays along the lakeside terrace (Plate 129B). Here the hall in the middle is carried up two storeys, quite as Wright proposed to do in one version of his first *Ladies Home Journal* house (Figure 32). In its horizontality, its concentration of fenestration, and its avoidance of medieval feeling, this house represents the extreme point of innovation and originality in Voysey's work.

His own house, The Orchard, at Chorley Wood in Hertfordshire, was completed in 1900. Externally this resembles closely his earlier houses, but The Orchard has two cross gables and hence a stronger feeling of symmetry. Towards this the more regular and carefully balanced spacing of the window bands further conduces. In studying the vocabulary of this house, a vocabulary destined to be parodied *ad infinitum* first by architects and then by builders in the next twenty-five years, one can understand his feeling he was a reformer not an innovator – the last disciple of Pugin, so to say, to whose secular work a line can be traced back via Webb, Street, and Butterfield. In Voysey's special sense of

continuity, which grew on him in later years, lies his great difference from Wright; for Wright was certainly determined, from the time he designed the Winslow house, to be as great an innovator – as much of an architectural creator – as was Sullivan in his sky-scrapers. None the less, to look forward a little, such a house by Voysey as that now called Little Court at Pyrford Common in Surrey, built in 1902, is quite worthy of comparison with Wright's masterpieces of that year. It shows little further development beyond his houses of the late nineties, however, except for a certain increase in horizontal emphasis.

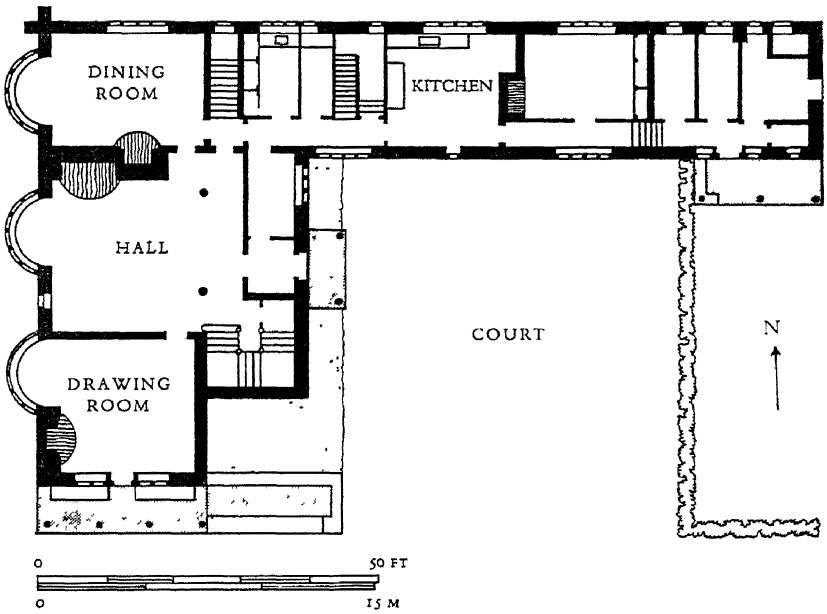


Figure 32. C. F. A. Voysey: Lake Windermere, Broadleys, 1898-9, plan

Just before and just after 1900, Voysey's work was very much better known and more influential in England, and increasingly in other countries,[29] than was Wright's either at home or abroad at that time. Moreover, many contemporaries in England were building rather similar houses. One of them, M. H. Baillie Scott (1865–1945), who also worked a good deal on the Continent, developed his planning much farther in the direction of Wright-like openness along the lines suggested by Voysey's project of 1890 for the Ward house. The many houses, both executed and projected, that Baillie Scott published in *Houses and Gardens* in 1906 made his planning known to the young architects of the Continent (Figure 33). Characteristic is his Blackwell house on Lake Windermere of about 1900 with an enormous two-storey living-hall elaborated spatially by various ingle-nooks and so forth. The plan was published by Muthesius in 1904, and may well have influenced Adolf Loos in Vienna and other Europeans even before his own book appeared (see Chapters 20 and 21). After 1906 Baillie Scott's work became quite 'traditional', and it is hard to believe that the projects published in the later version of his *Houses and Gardens* in 1933 are by the same man.

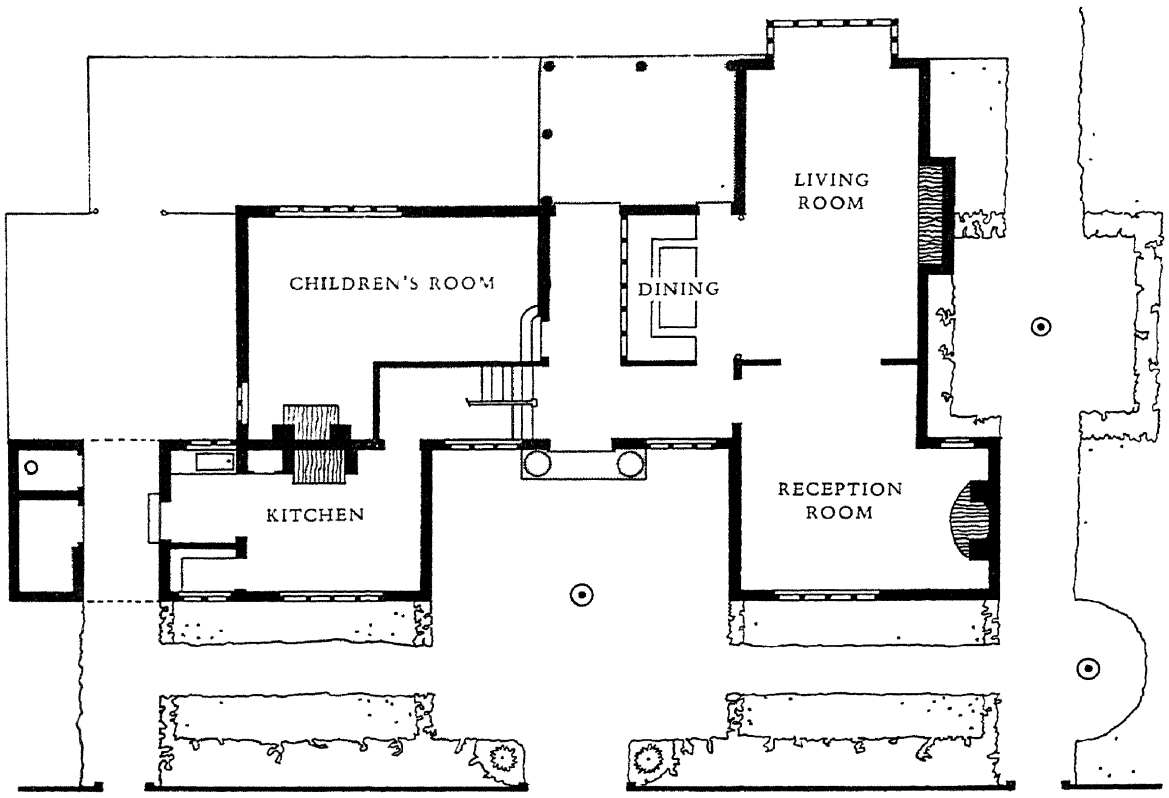


Figure 33. M. H. Baillie Scott: Trevista, *c.* 1905, plan

The name of W. R. Lethaby (1857–1931), later the biographer of Webb and an influential writer on architecture, should also be at least mentioned here. When Lethaby left Shaw's office, where he had been chief assistant, he began his career by building Avon Tyrrell in Hampshire in 1891, a large brick country house closer to Webb's than to Shaw's in character. But his main contribution was not in the field of domestic architecture.

Already by the mid nineties, the most successful English house-builder, more than rivalling Voysey in the quantity and occasionally even in the quality of his domestic work, was Sir Edwin L. Lutyens (1869–1944). Beginning like Voysey in the late eighties by building cottages, his first house of real distinction was the one he built for his cousin and frequent collaborator, the garden-designer Gertrude Jekyll, at Munstead Wood near Godalming in 1896. Several other good houses followed shortly, including notably The Orchards, Godalming, in 1898; but this early period of his work really culminates in Deanery Gardens at Sonning in Berkshire of 1901 (Plate 182B). In these houses are preserved all the best of the Shavian Manorial – the great timber-framed bay-window of the two-storeyed hall at Deanery Gardens is exemplary – simplifying and regularizing that mode under the influence of Webb and even approaching Webb's standards of craftsmanship in the execution.

Like Webb in his later work, Lutyens used almost from the first a good deal of

stylistic detail in interiors; he also turned back towards the 'traditional' in his exteriors considerably earlier than Baillie Scott when designing such houses as Overstrand Hall in Norfolk and Tigbourne Court at Witley in Surrey, both built in 1899 two years before Deanery Gardens. Lutyens became from about 1906 the leading architect of his generation in England, and his later work will be treated elsewhere (see Chapter 24). His increasing material success after the opening years of the century, rivalling Shaw's in the previous generation, is to a certain extent the measure, though not the cause, of Voysey's decline in popularity.

C. R. Ashbee (1863–1942) and George Walton (1867–1933) [30] were other domestic architects active in the nineties and the early years of the new century. The latter belongs to the Glasgow School, of which Mackintosh was the principal figure, and like Mackintosh he was more decorator than architect (see Chapter 17). One house in England, The Leys at Elstree of 1901, may be mentioned here. The interiors are fine examples of the Arts and Crafts mode, as it is sometimes called, more stylized than Voysey's but less original than Mackintosh's. The plan is organized symmetrically around a large two-storey hall rivalling Baillie Scott's of the period in its extensive spatial development.

Ashbee was one of the first Europeans to appreciate the significance of Wright, and was appropriately chosen by Wasmuth to write the introduction to his second publication of Wright's work in 1911 (see Chapter 19). Three houses by Ashbee side by side in Cheyne Walk in London, No. 37 of 1894 and Nos 38–39 of 1904, represent the chronological span of his significant architectural production and illustrate clearly his characteristic progress from the Shavian to an originality at least comparable to Voysey's. Closely associated with the Arts and Crafts Exhibition Society, Ashbee was like most of these men except Voysey [31] and Lutyens generally more active in the field of decorative art than in building. Right through this period English decorative art exercised a major influence on the Continent (see Chapters 16 and 17). So close is Mackintosh's tie with the Continent that his schools and even his houses are better discussed in relation to the Art Nouveau.

Of all these English architects who have just been mentioned, Voysey was the most creative in the field of domestic architecture and, except for Lutyens, the most productive down at least through the early years of the twentieth century; after 1910 he built almost nothing at all. Yet Voysey did not die until 1941, by which time a younger generation, to his confusion, had accepted him as a father of a modern architecture that he disapproved as strongly as did Lutyens. In 1940 he returned almost from the grave to receive the Gold Medal of the Royal Institute of British Architects.

From the Picturesque cottages of the opening decades of the nineteenth century to the early masterpieces of Wright and Voysey around 1900 is a far cry, further perhaps in the drastic revision that it represented of so old-established a building type as the dwelling-house than from Parris's Market Street buildings in Boston of 1824 to Sullivan's Carson, Pirie & Scott Store in Chicago as completed eighty years later in 1904. Yet in Anglo-American domestic architecture, quite as was the case with commercial architecture, real achievement recurred all through the century.

PART THREE

1890–1957

CHAPTER 16

THE BEGINNINGS OF THE ART NOUVEAU: VICTOR HORTA

THE two preceding chapters, in entering the nineties, crossed what is perhaps the major historical frontier within the century and a half covered by this book. The skyscrapers of Sullivan and the early houses of Wright and Voysey – despite Voysey's own disavowal of modernism – are among the first major manifestations of the period of architectural history that extends down to and includes our own time. The contemporaries of these men who were the new leaders on the Continent in the nineties had as sharp a sense of the novelty of the innovations they were making as did Sullivan or Wright, and the most characteristic stylistic formulation of this decade in Europe was appropriately known from an early date[1] as 'Art Nouveau'. Before discussing the Art Nouveau itself, two related developments that precede it must be considered at least briefly. In France, various feats of metal construction of the sixties, seventies, and eighties had prepared the way for the Art Nouveau on the technical side, and these have, moreover, considerable intrinsic interest in their own right. English innovations in decorative art of the eighties and nineties are accepted by most historians as providing one of the most important immediate sources of the Art Nouveau,[2] and English architecture and architectural theory of the later decades of the nineteenth century certainly offered a generic stimulus to Europeans between 1890 and 1910 that was of vital consequence to subsequent developments.

By the early nineties advanced English work began to be widely known on the Continent. In 1888 the German architect Alexander Koch (1848–1911) started to publish annually his *Academy Architecture* bringing current English production, and many significant projects also, to the attention of designers abroad. *L'Architecture moderne en Angleterre* by the French architect Paul Sédille (1836–1900) appeared in Paris in 1890. The architect Hermann Muthesius (1861–1927), who was stationed at the German Embassy in London from 1896 to 1903 primarily to study low-cost housing, issued two folio volumes devoted to *Die englische Baukunst der Gegenwart* in 1900–2, another on *Die neuere kirchliche Baukunst in England* in 1902 and, in 1904–5, three thick quarto volumes on *Das englische Haus*. These richly illustrated books made much of the story of the development of English architecture in the second half of the century available in German long before it was pieced together by the English ~~(see Chapters 12 and 15)~~.

Voysey never worked abroad; but his houses, known internationally from an early date thanks to their publication in the *Studio*, an English periodical founded in 1893, were soon much studied on the Continent, and to a lesser extent in America. Voysey's contemporaries Baillie Scott and Charles Rennie Mackintosh (1868–1928), however, both received foreign commissions as early as 1898; in fact, Mackintosh and his highly original ideas – he was no Voyseyan 'reformer' but a very bold innovator – received more support abroad than at home and were much more influential on the Continent than in Great Britain.

Historians of modern architecture have generally emphasized, and rightly, the special importance of the advances in metal construction [3] that were made in France in the later decades of the nineteenth century. The great name of the period is not that of an architect but of an engineer, Gustave Eiffel (1832–1923). At the International Exhibition of 1855 in Paris and again at the World's Fair of 1893 in Chicago the vast metal-and-glass structures were masked externally by real or imitated masonry façades. Between these dates, however, came a series of French exhibition buildings that were increasingly bold in scale and frank in design; with the construction of most of them Eiffel was directly concerned. Yet his bridge over the Douro at Oporto in Portugal of 1876–7 quite overshadowed the Galerie des Machines that he and Krantz built for the Paris Exhibition of 1867, as his later Pont de Garabit of 1880–4 outclassed the pavilion that he designed for the Exhibition of 1878 and that portion of the Bon Marché Department Store on which he collaborated in 1876 with the younger Boileau. In the exhibition buildings the metal-work was completely exposed and in that of 1878 [4] a serious attempt was made to develop appropriate embellishments, quite as Wyatt had done for Brunel at Paddington Station in London twenty-five years earlier. The rather tawdry result helps to explain why innovations in architectural design had so little public support in France in this period – a period, of course, when the bold innovations of the Impressionists were revolutionizing another art in Paris.

Beside Eiffel's gallery, the Anglo-Japanese room [5] which Whistler and Godwin showed at this same exhibition must have seemed infinitely sophisticated, and even the Late Stuart detailing of the cement–brick front of Shaw's Jury House most agreeably urbane. Such things might well have turned the attention of foreign architects towards England earlier than was generally the case. Sédille, one of the less tradition-bound French professionals of this period, did visit England in the eighties, publishing his book on current English architecture, which has just been mentioned, ten years before Muthesius's. His selections, however, were not very discriminating, nor is there evidence that he profited much from what he saw. The Printemps department store of 1881–9, designed ~~of course~~ well before his trip, certainly shows no English influence.

For the Paris Exhibition of 1889 [6] Eiffel early proposed and, in 1887, was commissioned to build the tremendous all-metal tower [7] which still dominates Paris (~~Plate 130A~~). As has been noted, this 984-foot edifice was, down to the erection of the Empire State Building in New York by Shreve, Lamb & Harmon more than forty years later, the tallest structure in the world. The Eiffel Tower, which appropriately carries its designer's name, is no more a building in the ordinary sense than are his great bridges

however. Although scraping so much higher skies than did Holabird & Roche's Tacoma Building in Chicago, which was erected in precisely the same years, the Paris tower was far less significant either technically or functionally. Except the painter Seurat, most contemporaries disliked it, considering it a monstrous blemish on the Parisian skyline; today of course, it is rightly deemed a nineteenth-century masterpiece, but a masterpiece of engineering rather than of architecture.

As with Eiffel's pavilion at the Exhibition of 1878, there is considerable ambiguity in the design of the Eiffel Tower. Seen from a distance its four legs have much of the vigorous spring of his bridges and the tapered shaft of criss-crossed metalwork seems – but in fact is not – an almost inevitable expression of large-scale construction in metal. Seen from nearer to, however, the arbitrarily arched forms that link the legs are very conspicuous and also the coarse ornamentation of curvilinear strapwork – recalling a little Wyatt's at Paddington Station of nearly forty years before, but much less just in scale – with which the basic forms are bedecked. The close similarity of this mixture of frank construction and applied decoration to the Art Nouveau approach to the design of metal structures will shortly become evident. Over-impressed, perhaps, by the more functional engineering feat of construction at the 1889 Exhibition provided by the wide-spanned metal-and-glass Palais des Machines of the engineers Contamin (1840–93), Pierron, and Charton – in which the contribution of the associated architect C.-L.-F. Dutert (1845–1906) was relatively unimportant – certain later critics have preferred that structure to the Eiffel Tower. Yet it is the tower which clearly has more of the magnificence of Eiffel's bridges despite its irrelevant and (from a distance) almost invisible ornamentation. The tower, moreover, is premonitory of the Art Nouveau; the Galerie des Machines rather of later modern architecture (see Chapters 20 and 22).

One other line of innovation in France in these decades deserves mention. In 1871 Jules Saulnier built a factory for Chocolat Menier near Paris at Noisiel, S.-et-M., with an exposed metal skeleton. The iron frame is strengthened by diagonal bracing in a fashion similar to that of late medieval timber-framing in France, and the infilling of the panels is of varicoloured bricks. This structure attracted the attention of Viollet-le-Duc, who saw in it a realization of certain of his theoretical ambitions for nineteenth-century architecture. He not only mentioned it very favourably in the second volume of his *Entretiens*, which appeared in 1872, but in several illustrations suggested similar and variant combinations of iron and masonry. In a colour plate, for example, he showed a striking urban façade with its visible iron framework filled with brilliantly coloured glazed tiles. By the nineties quite a few buildings in France had exploited what may be called the 'Saulnier System';[8] it is perhaps more important, however, that Viollet-le-Duc's text and illustrations made the idea familiar internationally.

When one learns that Horta or Gaudí or various Americans 'read Viollet-le-Duc' in the seventies and eighties one must assume that the *Entretiens*, of which the first volume appeared in 1863, is meant – and perhaps even more specifically the second volume of 1872 with its accompanying set of plates. These last could be 'read' by architects to particularly good purpose. The *Entretiens* were available to most Europeans in the original language and to the English and the Americans in translation.[9]

The characteristic employment of metal by Art Nouveau architects in the nineties and the first decade of this century undoubtedly owed a great deal both to the inspiration of Eiffel's large engineering structures, culminating in his tower of 1887–9, and to the vigorous critical support of Saulnier's ideas which Viollet-le-Duc provided, not to speak of the projects of his own that he published in 1872. The knot is tied tighter – although with a different sort of structural development – when one notes that de Baudot, of all French architects most particularly the disciple and heir of Viollet-le-Duc as well as a former pupil of Henri Labrouste, was the first to exploit ferro-concrete architecturally and not merely technically (see Chapter 18). Moreover, he employed as his contractor to execute what was hardly more than a concrete version of Viollet-le-Duc's second project of 1867 for a mausoleum for the Duchess of Alva, Contamin, one of the engineers responsible for the Galerie des Machines at the Exhibition of 1889. But the Art Nouveau was even less a matter of structural innovation, pure and simple, than Sullivan's contemporary skyscrapers (see Chapter 14).

This brief and curious episode in the history of art,[10] starting in the early nineties and subsiding little more than a decade later, has always been called in English by a French name, perhaps because it never became acclimatized in England but was always considered a dubious import from Belgium and France. Despite the diffidence of the English – which Americans fully shared – the Art Nouveau was an international mode. It was as frequently called in France by the English name 'Modern Style', while to the Germans it was 'Jugendstil' and to the Italians 'stile Liberty'. The German term comes from the magazine *Jugend*, whose illustrations and typography were fairly consistently in the new mode; the Italian from Liberty's, the shop in London whose orientalizing fabrics became widely popular at this time (but with overtones from the obvious pun involved). In Italian it is also, and much more descriptively, the 'stile floreale'.

The Art Nouveau is not primarily an architectural mode. Many of the finest and boldest of the large edifices built between 1890 and 1910, however, beginning with Sullivan's skyscrapers, are certainly related to its ethos; and the Art Nouveau leaders produced quite a few buildings of real distinction that can be defined by no other term. Like the Rococo of the early and mid eighteenth century – which the Art Nouveau sometimes closely resembled and to whose revived forms it was often vulgarly assimilated – it was most successful as a mode of interior decoration. Generally linear rather than plastic,[11] the Art Nouveau was also very closely associated with the graphic arts; indeed they provide many of the most characteristic examples, as well as the earliest items that can be considered possible prototypes.

How far back the ultimate sources of the Art Nouveau should be sought, and precisely where, continues to be a subject of active research. In the graphic arts there are certainly significant similarities to be noted in William Blake's [12] way of designing book pages. Through the Pre-Raphaelites, moreover, a line of descent from Blake can be traced down to the eighties and nineties when, indeed, his characteristic pages were sometimes reproduced in facsimile. But oriental,[13] specifically Japanese, influence certainly played some part also in the gestation of the mode. There is early evidence of that influence on western architecture in the decorative work of Godwin and Nesfield in

England, beginning already in the sixties, as also in the painting of the Impressionists in France (see Chapters 10 and 12). But the earliest designs that can be readily mistaken for Continental work of 1900 are certainly by the English architect-decorator Mackmurdo and date from just after 1880. Many of the textile and wallpaper patterns that Mackmurdo, Heywood Sumner (1853–1940), and others created for the Century Guild, founded in 1882, already have the characteristic semi-naturalistic [14] forms, swaying lines, and asymmetrical organization of the mature decorative mode of the nineties. Even more striking is the design of Mackmurdo's title-page of 1883 for his book on the London churches of Sir Christopher Wren [15] – a curious conjunction, this, of two opposed stylistic developments of the eighties, the one towards a Baroque or 'Georgian' Revival, the other towards a wholly novel mode of ornamentation.

English products, such as were shown by the Arts and Crafts Exhibition Society from its foundation in 1888, soon reached the Continent. Moreover, even before the *Studio* began publication in 1893 Koch's *Academy Architecture* (from 1888), which has already been mentioned, and (from 1890) his review *Innendekoration*, as well as less specialized English magazines such as (from 1884) Mackmurdo's *Hobby Horse* and (from 1891) *The Yellow Book*, with its highly stylized and very curvilinear illustrations by Aubrey Beardsley, were eagerly studied all over western Europe. The younger men were reading William Morris, too, and responding enthusiastically to his social and ethical demands for a reform of the household arts. At the same time the novel styles of the most advanced European painters offered a powerful stimulus to architects.

This matter of the relationship between advanced painting and advanced architecture in the nineteenth century, a relationship destined to be of rather greater importance in the early twentieth, deserves some broader comment and recapitulation here. A hundred and fifty years before, when Romantic Classicism was being born in Rome, painters, sculptors, and architects shared common ideals and worked with a full understanding of each other's problems (see Chapter 1). The backgrounds of David's bas-relief-like early paintings show architecture in the most advanced taste of the day, and no more beautiful Romantic Classical furniture was actually produced than that which he invented for his Classical scenes and occasionally introduced in his modern portraits. The Classical sculptor Thorwaldsen at the Glyptothek in Munich and later at the Thorwaldsen Museum in Copenhagen collaborated closely with the architects Klenze and Bindesbøll. Schinkel was himself a Romantic painter of some distinction before he matured as a Romantic Classical architect, and he collaborated later on the mural for the front of the Altes Museum with the painter Peter Cornelius, as did Klenze on the decorations of the Glyptothek in Munich.

With the gradual decline of Romantic Classicism architects and painters had more difficulty in developing parallel programmes; and the results of collaboration between them in the decoration of buildings were rarely as happy as the backgrounds the architects sometimes supplied to the painters. Ingres's stained-glass windows of the forties in the Chapelle d'Orléans at Dreux and the Chapelle Saint-Ferdinand at Neuilly have been mentioned. More successful are the murals by Delacroix in Joly's library at the Chambre des Deputés in Paris; but there is hardly that real visual harmony between picture

and setting that the previous period had often achieved. However, the rising interest in architectural polychromy and the extension of the range of acceptable stylistic models to include the Early Renaissance and even the Middle Ages were both encouraged by the turn that the art of painting was beginning to take on the Continent around 1815. Hübsch, for example, was a sort of Nazarener among architects. Later Ingres was a close friend of Hittorff, even though he never collaborated with him to any good purpose (see Chapter 3), much less with Viollet-le-Duc, with whom he was also on good terms. The degree of stylization that Early Christian, Romanesque, or Gothic architectural modes properly demanded was not yet acceptable in figural art. Indeed, the rather *quattrocento* early pictures of Ingres were much too 'Gothic' for most of his contemporaries and are generally less esteemed than his more Classical work even today.

Above all, the ever-rising importance of landscape in the painting of all countries was necessarily without real parallels in architecture, except in so far as the increasing desire to open up houses towards the circumambient view reflects a similar preoccupation with the natural scene. As to Realism, the principal artistic movement of the mid century in French art, that could only be echoed in architectural theory. Impressionism may seem even more difficult to relate to architecture.[16]

In England in the fifties, however, a loose alliance did exist between the new Pre-Raphaelite painters and some of the leading High Victorian Gothic architects, both supported for a time by the critic Ruskin. In the sixties and seventies Morris on the one hand, developing as a decorator out of the Pre-Raphaelite *milieu* of Rossetti and Ford Madox Brown, and Whistler on the other hand, chiefly nurtured in the advanced artistic world of Paris but also influenced in England by Rossetti, collaborated closely with architects – Morris with Webb and with Bodley, Whistler with Godwin. As has been noted, the strikingly novel results of the latter collaboration were displayed in Paris in their Anglo-Japanese room at the Exhibition of 1878. Europeans became generally aware of Morris's decorative work only somewhat later.

In France in these decades few painters commissioned, as in England, talented individualists of the order of Shaw or Webb or Godwin to build their houses.[17] If they were Realists or Impressionists they could not have afforded to do so; if they were prosperous Academicians they would not have wished to. Even in England, Millais, after he became really successful, preferred to build a dull house in South Kensington of quite conventional character rather than to employ Shaw or Webb or Godwin.

In the eighties the most advanced European painters, not merely those of France but more generally, turned away from realism even of the Impressionist sort in order to concern themselves more with pattern and with expression. The two French leaders of this reaction whose art seems to posterity most architectonic, Cézanne and Seurat, did not affect architecture or design at this time at all. Even Van Gogh and Gauguin, whose styles have a more decorative inflection, were less influential than such almost forgotten painters as the Dutch Toorop and the Belgian Khnoopf, the better-known Belgian Ensor, or the Swiss Hodler and the Norwegian Munch, not to speak of the English Beardsley.

The general admiration in *avantgarde* circles for the work of these artists – with which went paradoxically a continuing and even growing estimation of the anti-architectonic

pictures of the Impressionists and Neo-Impressionists both French and native – ran parallel everywhere with the rapid rise and spread of the Art Nouveau. In some sense, indeed, the Art Nouveau may be considered the equivalent as a mode of design of what is somewhat ambiguously called Impressionism in music – the work of Debussy, Delius, etc. Some of the chief critical supporters of the new painters in the nineties such as Julius Meier-Graefe were also active proponents of the Art Nouveau. Yet advanced painting, in fact, provided little more than a sympathetic atmosphere for the birth of the Art Nouveau, somewhat as the young painters and critics of the third quarter of the eighteenth century had done in Rome for the gestation of Romantic Classicism in architecture.

Why the Art Nouveau should have been initiated full-fledged by Victor Horta (1861–1947) [18] in Brussels in 1892 remains a mystery. The rather similar stylistic crystallization in Sullivan's architectural ornament, henceforth almost equally organic and sinuous in character, had taken place several years earlier when the interiors of the Auditorium were being designed in 1888–9. These will hardly have been known in Belgium, for few foreigners were aware of Sullivan's work at all until they came to Chicago to visit the World's Fair in 1893. Illustrations of the remarkable ironwork on Gaudí's Palau Güell in Barcelona are not likely to have reached Brussels either, though several of its interiors were published in *The Decorator and Furnisher* in New York in 1892. In any case Gaudí's ultimate style was only beginning to take form in the early nineties. A certain amount of quite original decoration was being done in New York from the beginning of the eighties by Louis Comfort Tiffany (1848–1933), but it is unlikely that it was known abroad. Tiffany's 'Favrile' glass came a good deal later and is precisely contemporaneous with the Art Nouveau,[19] of which it continued to be for a decade and more one of the most internationally distinguished products.

It is generally assumed that Horta knew the rather similar glass designed earlier by Émile Gallé (1846–1904) in France and that he already had some familiarity with the work of such painters as Ensor, Khnoopf, and Toorop, if not with that of Hodler, Munch, or Beardsley. Yet such familiarity would hardly by itself have counterbalanced the academic training he received from his master and later employer Balat (see Chapter 9). This explains, however, the very Classical character of his Temple des Passions Humaines, erected in 1884 in the Parc du Cinquantenaire in Brussels. Horta did no building on his own between 1885 and 1892. Presumably, however, it was knowledge of the theories and the projects of Viollet-le-Duc acquired in those years that encouraged him to make frank and expressive use of iron in association with masonry when he really began to practise. Yet the influence of Viollet-le-Duc hardly provides an explanation for the specific character of his innovations in ornament or the consistency of style that he achieved almost at once.

Against such rather negative assumptions, a more positive one may be set. In the Tassel house in Brussels, completed in 1893, Horta's first mature work, he introduced an English [20] wallpaper between the exposed metal structural elements of the dining-room walls. It is highly likely, therefore, that the new English decorative products were already known to him the previous year [21] when he designed and began this epoch-making house.

The Tassel house at 6 Rue Paul-Émile Janson, just off the Avenue Louise, initiated a new architectural mode as definitely as one modest terrace-house could possibly do. How long before 1892, when the Tassel house was begun, Horta may have been designing on paper in this way does not seem to be known. When one considers how important the innumerable projects of the second half of the eighteenth century are to our understanding of the architectural revolution that established Romantic Classicism as the successor to the Baroque, the absence of such clues concerning the gestation of the Art Nouveau is most exasperating; but thorough research has so far brought nothing relevant to light.

In plan there are no very great novelties in the Tassel house, although the interior partitions of the principal floor are bent to give varying shapes and sizes to symmetrically disposed spaces that open rather freely into one another. The major innovation lay in the frank expression of metal structure and in the characteristic decoration, particularly that of the stair-hall (Plate 130B). There at the foot of the stair an iron column rises free and svelte out of which iron bands branch at the top, like vines from the trunk of a sapling, to form brackets under the curved openwork beams of iron above. Other lighter and less structural bands interlace to form the stair-rail. The organic, swaying, and interweaving lines of the metalwork, both structural and decorative, were originally rather boldly echoed in purely ornamental curvilinear decoration painted on the walls, and they are still so echoed in the patterns of the extant floor mosaic.

These patterns in the stair-hall are each unique, not repeated like those on the English chintzes and wallpapers they so much resemble. The lines, whether moving freely in space like those of the ironwork, painted on the curved wall, or inlaid in the flat floor plane, all form part of complex organic motifs. The result is therefore more comparable to Mackmurdo's title-page of 1883, or even to some of the repoussé brasswork on his furniture. (Like the very few buildings Mackmurdo designed, this furniture is quite rectilinear otherwise, it might be noted.) During the brief life of the Art Nouveau hardly even Horta himself, much less those who followed in his footsteps, achieved an ensemble more exemplary than this stair-hall. It is truly a work of interior architecture, not merely a matter of applied decoration as is most of the ornament used in association with the English wallpaper in the dining-room.

The façade of the house is much less striking than the interiors. However, the linear curves of the internal structural elements are reflected plastically, so to say, in the bowing forward of the entire central window area. This is so extensive as to approach, but not to equal, English window-walls of the preceding decades. In the upper storeys the lights in this broad bay-window are subdivided only by iron colonnette-mullions and topped with exposed iron beams. There is no archaeological reminiscence of any past style here; yet it must have been from local stucco-work of the Rococo period that Horta drew the inspiration for his carved stone detail. It certainly does not derive either from England or from Viollet-le-Duc. Horta was, and continued to be, much less happy in devising such plastic ornament than in his metalwork; but he felt obliged to apply it here and there on capitals, cornices, brackets, and so forth, just as conventional architects of the time used the common coin of the Renaissance or Gothic vocabularies.

The Tassel façade may be almost unnoticeable today unless one looks carefully for its exposed metalwork and its rather original detailing, but it evidently had an almost instant appeal in the Brussels of the nineties. The somewhat similar Frison house at 37 Rue Lebeau was built in 1893–4, and in 1895 three more houses were begun, of which the finest is the much larger Hôtel Solvay at 224 Avenue Louise.[22] This house was built, together with a laboratory started a year later, over a period of several years for the famous chemist Ernest Solvay. It remains the most complete of Horta's domestic commissions, since it retains all the original furniture designed by the architect, even though it is now unoccupied. The broad façade is much more plastic than that of the Tassel house with the walls curving forward in the first and second storeys to enframe two tall flanking bays subdivided by metal colonnettes and transoms (Plate 131A). The ironwork of the balconies is especially rich and characteristic. In the interiors the exposed metal structure and various elaborate incidental features, such as the lighting fixtures, participate fully in the general pattern of organic curvature. Although plant-like in feeling, Horta's metalwork is quite as abstract as Gaudí's grilles in the entrance arches of the Palau Güell (Plate 96B); it lacks, however, a comparable integrity of handcraftsmanship.

The house of Baron Van Eetvelde of 1895 at 4 Avenue Palmerston – the extension to the left numbered 2 is considerably later – has a quite different exterior from the Solvay house. The front has an almost Sullivanian range of arched bays consisting entirely of exposed metalwork. Inside, the salon is even more of a masterpiece than the stair-hall of the Tassel house. A circle of iron columns, curving up into elliptical arches, supports a low dome of glass across which long leaf-like bands of transparent colour continue the sinuous structural curves below. In a happy floral metaphor the lighting fixtures bend and droop, each electric bulb shaded by a coloured glass bell of over-blown tulip shape. Not since Nicholas Pineau developed the *pittoresque* version of the Rococo in the second quarter of the eighteenth century had such elegant consistency and originality been seen in the decorative exploitation of plant-like elements.

Horta's other fine houses in Brussels range in date down to the Wiener house of 1919 in the Avenue de l'Astronomie. After the very elegant and restrained Hallet house of 1906 at 346 Avenue Louise they became so dry and so formal that the term Art Nouveau hardly applies to them, however. There are two much earlier examples at 23–25 Rue Américaine, built in 1898, which are of special interest because Horta occupied them himself. The virtuoso elaboration of the interwoven structural and decorative ironwork of the oriel on the one to the left and the continuous ribbon-window set behind iron mullions in the top storey of the other are among the most striking and original external features he ever designed. These years at the very end of the century undoubtedly represent the peak of his career. His most advanced domestic planning was to be seen in the Aubecq house of 1900 at 520 Avenue Louise, demolished in 1950 (Figure 34). There the interflow of space between the interlocking octagonal reception rooms of the ground storey comes very close to that found in certain early houses by Wright (see Chapters 15 and 19).

Certainly Horta's most important single work is the Maison du Peuple of 1896–9. This was built for the city authorities of Brussels on a curiously-shaped site of which

Horta took the fullest advantage. Extending around a segment of a circular *place* and part way along two radial streets, the façade forms a continuous but irregular series of curves, mostly concave, but with the main entrance placed in one of the shorter convex portions. The greater part of the exterior wall consists of a visible skeleton of iron with solid masonry sections defining the ends and the entrance bay. The vertical stanchions are not curved, but many of the horizontal members are slightly arched. Decorative metal elements at some of the intersections attempt, not altogether successfully, to give to the structural grid the over-all organic quality so happily achieved in the Van Eetvelde entrance hall. As in his houses, Horta had difficulty in assimilating the carved detail of the stonework, here associated with wall panels of brick, to the metalwork; where the two come close together, as in the entrance arch of mixed materials, the result is very awkward indeed.

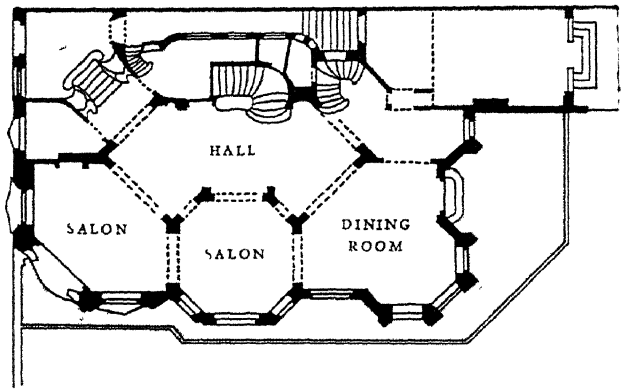


Figure 34. Victor Horta: Brussels, Aubecq house, 1900, plan

Comparison with Sullivan's work of these years is inevitable – there is really nothing else of the precise period with which the Maison du Peuple can properly be compared. With Sullivan the main structural members of metal are always covered with terracotta and the visible metalwork is almost entirely decorative. Yet there is considerable similarity in the way Sullivan handled the metal mullions at the entrances of the Carson, Pirie & Scott Store, mullions which rise into and interweave with the ornament above, to Horta's attempt to merge the structural and the decorative in his framework of visible metal elements here.

His greatest success at this was certainly in the auditorium at the top of the Maison du Peuple. In this the openwork iron beams that support the roof, forming a sort of hammer-beam system with the side galleries, have graceful and expressive but essentially structural curves (Plate 132B). To these the decorative railings of the galleries provide a delicate and harmonious counterpoint in their intricately plant-like detailing. Around the structural frame the auditorium is enclosed only by glass or by very thin panels held in metal frames, rather like the 'curtain-walls' of the mid twentieth century; thus there is in this permanent edifice a good deal of the volumetric lightness previously associated with temporary exhibition buildings only.

Among Horta's commercial buildings in various Belgian cities the most conspicuous is the Innovation Department Store of 1901 in the Rue Neuve in Brussels (Plate 131B).

The front, almost entirely of metal and glass though set in a granite frame, is a remarkable example of Art Nouveau decorative design at fully architectural scale. The Innovation completely overshadows the equally bold but extremely coarse and clumsy Old England Department Store just off the Place Royale in Brussels, also almost entirely of iron and glass, that was built by Paul Saintenoy (1832–92) two years earlier. In the Gros Waucquez Building in the Rue de Sable of 1903–5 and the Wolfers Building of 1906 in the Rue d'Arenberg, as in his houses of those later years, Horta's treatment is much more restrained than in the department store. Stone piers subdivide their façades, curves are fewer and more structural, and there is much less ornament and almost no exposed iron.

It is a historical paradox that Horta's architectural career should have continued long after the Art Nouveau was forgotten, bringing him in the end such public esteem and material success as few other innovators of his generation ever knew. Yet his later work, beginning with his Palais des Beaux-Arts in Brussels, designed in 1914 just before the First World War but begun only in 1923, and continuing down to his Central Station there, begun in 1938 and not yet wholly complete, is of purely local significance. What brought him a peerage and a street named after him – that at the side of his Palais des Beaux-Arts – was not his early work of the Art Nouveau years, standing with Sullivan's skyscrapers like a landmark at the beginning of modern architecture, but this later official work, which is almost totally without intrinsic interest and, in the case of the station, actually rather monstrous. The contrast with Sullivan's barren later years after 1904 is very striking.

Despite the poetic justice that there might be in ignoring a Belgian who long falsely claimed the credit for the invention of the Art Nouveau, one cannot turn to other countries without mentioning the name of Henri Van de Velde (1863–1957).[23] In 1892, when Horta designed the Tassel house, Van de Velde had not even begun to practise architecture. A little later his first work, which is his own house of 1895–6 at Uccle near Brussels, though very clumsy externally because of its massive mansard and its heavy membering, included furniture more functional than Horta's, if much less elegant and imaginative. He also brought to Brussels – and later to Paris, Berlin, and Weimar – an interpretation of Ruskin's and Morris's sociological approach to the arts that had a wide and growing influence, for he pursued his mature career as decorator, architect, and educator largely outside Belgium[24] (see Chapters 17 and 20).

CHAPTER 17

THE SPREAD OF THE ART NOUVEAU: THE WORK OF C. R. MACKINTOSH AND ANTONI GAUDÍ

THE initiation of the Art Nouveau by Horta in 1892 was sudden and its spread extremely rapid. Almost concurrently forms very similar to those he had invented began to appear in other European countries. Rarely has a new idea in the visual arts been taken up internationally with so little lag. Advanced artistic circles at this time were evidently thoroughly prepared to accept major innovations, and new periodicals, starting up almost one a year, provided vehicles for their transmission: *Pan* in 1895, for example, *Jugend* in 1896, *Dekorative Kunst* in 1897, and *Die Kunst* in 1899, to mention only German magazines. Had the Art Nouveau not already been invented by Horta the year before, three works of art dated 1893, Aubrey Beardsley's 'Cello Player', an illustration in black and white, Toorop's picture 'Three Brides', and Munch's 'The Cry', first a painting but widely available as a colour-lithograph the following year, might well have supplied the impetus for other designers to do so; doubtless such inspiration did encourage rivalry rather than direct imitation of Horta. In Germany a Munch exhibition in Berlin in 1892 and a Toorop exhibition in Munich in 1893 called attention to the long waving curves and the general linearity of style of these artists. In 1893, moreover, the *Studio* began to bring to designers and architects everywhere well-chosen illustrations of current English decorative work.

England itself was least responsive to the new Continental mode. It is, indeed, improper to call the Bishopsgate Institute in Bishopsgate in the City of London, built in 1893–4 by C. Harrison Townsend (1850–1928), Art Nouveau. Yet, despite its evident dependence on Webb, the way in which Townsend took the characteristically stylized but basically naturalistic patterns of contemporary English wallpapers and chintzes and used them in relief at architectural scale is as drastic an innovation as are the bits and pieces of more abstract stone carving that Horta used on his Brussels houses of these years. Townsend remained a 'fellow-traveller' rather than a member of the international Art Nouveau group for a decade. For example, the façade of his Whitechapel Art Gallery in the Whitechapel Road in the East End of London, designed in 1895 and built in 1897–9, is an improved version of that of the Bishopsgate Institute (Plate 134B). The broad and almost Richardsonian arch is placed off centre, the ornament is freer and bolder, and the few windows are organized in a continuous band below the plain wall of the upper portion.

Less successful, though perhaps more advanced, is Townsend's Horniman Museum of 1900–1, a free-standing edifice in London Road, Forest Hill, south of London. This has less external ornamentation, except for the façade mosaic by Anning Bell, but there is a very plastically conceived tower with rounded corners placed at one side of the front façade. His later church of St Mary the Virgin, built in 1904 at Great Warley in Essex,

is very simple, indeed rather Voysey-like as regards the buttressed and rough-cast exterior. However, the elaborate decorations inside by Sir William Reynolds-Stephens (1862–1943) offer the most virtuoso example of Art Nouveau in England – at least they are as close to the Continental mode as the English ever came. No other English architect came nearer the Art Nouveau than Townsend; in quality, moreover, his work excels most of that done on the Continent by the various imitators and emulators of Horta, even if it lacks the vigorous integrity of Voysey's best houses of these years.

The earliest and, later, the most versatile Art Nouveau architect of France [1] was Hector Guimard (1867–1942). But his first work of consequence, the complex block of flats in Paris called the Castel Béranger [2] at 16 Rue La Fontaine, which was completed after several years of construction in 1897, still represents a very ambiguous exploitation of the new ideas coming from Brussels. It must be remembered, however, that the original design almost certainly antedates by a year or two all other Art Nouveau work outside Belgium. Also notable is the fact that the façade of the Castel Béranger was premiated by the City of Paris in 1898, since this indicates the rapidity with which the new mode won approval in France.

In 1896, while the Castel Béranger was building, Samuel Bing, a Hamburg art-dealer whose wares included Japanese prints – by this time even more in demand than at any time since their introduction to Europe in the late fifties – and also the new English decorative products, decided to open a shop in Paris. Bing's Maison de l'Art Nouveau at 22 Rue de Provence was designed for him by L.-B. Bonnier (1856–1946) in the Belgian mode, which thereby acquired its familiar name. This shop was of no great architectural interest, however, except that it was the first of the multitude that were produced in the next ten or fifteen years. Not only in Paris but in most Continental cities large and small, and even in England and in America, where the Art Nouveau otherwise hardly penetrated, these shop-fronts can still be noted; one of the finest has even been transferred from Paris to the Philadelphia Museum of Art in America.

Bing also enlisted the services of Van de Velde, still quite immature as a designer compared to Horta, but very articulate as a critic. Influenced more intellectually than visually by the English, Van de Velde's personal development as a decorator now proceeded very rapidly. The lounge he designed for the Dresden Exhibition of 1897, for example, was an accomplished if somewhat heavily scaled example of an Art Nouveau interior and very superior to those completed in his house at Uccle the year before.

By the time the Maison du Peuple in Brussels was opened three years later in 1899 and Horta's early career had reached its apex of achievement, the Art Nouveau was already a favourite mode with young French designers and generally in rising favour in *fin de siècle* Paris. As a result even established architects were not averse to introducing its curves in interior decoration and for the detailing of exposed metal structural elements, although most of them had little understanding of its real possibilities. The giant stone colonnades of the Grand Palais in Paris, designed in 1897 and built in 1898–9 for the Exhibition of 1900, were presumably intended to rival those of the plaster palaces of the Chicago World's Fair of 1893; but behind them the architectural team of H.-A.-A. Deglane (1855–1931), L.-A. Louvet (1860–1936), both pupils of Richardson's master,

André, and A.-F.-T. Thomas (1847–1907) provided a vast iron-and-glass interior detailed in a coarse sort of Art Nouveau way that is quite unrelated to the academic treatment of the exterior.[3]

The entrance feature, designed by René Binet (1866–1911), and the Pavillon Bleu by E.-A.-R. Dulong (1860–?), the principal exhibition restaurant in the Champ de Mars, were even more whole-heartedly *à la mode*. One can hardly regret, however, that these gaudy structures, unlike the Grand Palais, were only temporary. A much superior example of Art Nouveau decoration, Maxim's Restaurant in the Rue Royale, remains intact as it was redecorated in 1899 by Louis Marney. This is full of period flavour and still splendidly maintained, but it has no real existence as interior architecture. Soon the Art Nouveau would be vulgarized in dozens of cafés, large and small, all over Europe. Of these the Brasserie Universelle in the Avenue de l'Opéra in Paris by Niermans, carried out two or three years after Maxim's and lately demolished, was perhaps the most sumptuous; there, however, the new mode was eclectically combined with a lush Neo-Rococo.

The architect Charles Plumet (1861–1925), working with the decorator Tony Selmersheim (b. 1871), built in 1898 at 67 Avenue Malakoff the first of a series of houses in which Art Nouveau decoration was grafted on to a general scheme of design that was more or less Late Gothic. This has just been demolished. Such eclecticism, based more usually on eighteenth-century models, is characteristic of the rapid Parisian dilution of the Art Nouveau and doubtless played a great part in its early descent into the obsolescence of the *démodé*. Yet Auguste Perret (1870–1954), in a large block of flats built in 1902 at 119 Avenue de Wagram, exploited in masonry a heavier and richer sort of Art Nouveau than Plumet's with considerable success (Plate 134A). This edifice is in curious contrast to the flats of ferro-concrete at 25 bis Rue Franklin, designed by Perret in 1902 also, with which his career is generally considered to begin. Even the latter, moreover, have considerably more Art Nouveau feeling in their panels of faience mosaic than is usually recognized (see Chapter 18). The block in the Avenue Wagram is quite typical of French production in these years but of much higher than average quality.

The most accomplished French Art Nouveau designer remained Guimard, the first to take up the mode. His most conspicuous works, however, the Paris Métro entrances of 1898–1901, lie outside the normal realm of architecture (Plate 137B). These are executed entirely in metal of the most sinuous and vegetable-like character, and their extreme virtuosity is the more surprising in that they consist of metal castings produced in series. His no longer extant Humbert de Romans Building of 1902 in the Rue Saint-Didier in Paris, on the other hand, illustrated the usual difficulties of Art Nouveau architects when working with masonry. The exterior was neither Neo-Rococo nor Neo-Flamboyant but curiously crude and gawky in its originality, like his Castel Béranger, with none of the Art Nouveau grace that even Plumet sometimes evoked with success, or the rather lush ornamentation of Perret's block of flats in the Avenue Wagram. The auditorium inside, however, employed curved structural members even more boldly than Horta had done in that of the Maison du Peuple. Here Guimard succeeded in giving a masculine vigour to the rather feminine forms of a mode already passing its brief prime.

As late as 1911, however, Guimard remained faithful to the Art Nouveau in an extensive range of contiguous blocks of flats that he built at 17–21 Rue La Fontaine near the Castel Béranger. For his own flat there he designed ironwork as boldly abstract as advanced mid twentieth-century sculpture in metal, but also as suavely elegant as comparable Rococo detail of the eighteenth century. The exteriors, moreover, which are entirely of stone, have a great deal of the refinement and restraint of Horta's Hallet house of 1906 in Brussels. They are, however, more plastically treated with boldly moulded bay windows and attic storeys. Except for Perret's, few Parisian blocks of flats of the period rival these in interest or in quality of design and execution.

Three Paris department stores of the early years of the century continued to use the metal-and-glass interior structure of Boileau and Eiffel's Bon Marché, with notable success. In presumable emulation of Horta's Innovation in Brussels, moreover, the architects of two of these extended considerably the external use of exposed metal introduced by Sédille at the Printemps in the eighties. These two stores remain, with Guimard's Métro entrances, the most prominent Parisian examples of the Art Nouveau. The main branch of the Samaritaine [4] in the Rue de la Monnaie near the Pont Neuf was built in 1905 by C.-R.-F.-M. Jourdain (1847–1935). This has several fine galleried courts inside in the tradition of the Galeries du Commerce et de l'Industrie of the 1830s, but it is even more distinguished for the sturdy scale and the straightforward design of the external metal frame (Plate 133). The actual structural members are hardly bent at all by the exigencies of the mode; but they were characteristically ornamented not only with decorative metalwork but also with inset panels of polychrome faience, now painted over. On the north front, however, other panels, here of faience mosaic, remain visible; these are of even greater delicacy and elegance than Perret's foliate panels in his block of flats of 1902–3 in the Rue Franklin.

The contemporary Grand Bazar de la Rue de Rennes, now the Magasins Réunis, at 134–136 Rue de Rennes by H.-B. Gutton (b. 1874) is generally fussier in design than the Samaritaine. Gutton achieved, however, a more completely volumetric expression, emphasizing the lightness and the thinness of metal-and-glass construction somewhat as the early monuments of the 1840s and 1850s in England had done. New shop-windows below and the removal of the open grillework that once rose against the sky have now much diminished its effectiveness. Binet's earlier galleried court of 1900 at the Printemps was burned out in 1923, unfortunately. With the lifts rising in the corners and the staircases swooping down in great splashing curves, this court was altogether superior to his Entrance to the Exhibition of 1900 and even to Frantz Jourdain's small later courts in the Samaritaine. It seemed somehow to epitomize what a great metropolitan department store *ought* to look like somewhat as Garnier's Opéra epitomizes what later generations came to expect of an opera-house. If Prince Danilo supped with the 'damen' of Maxim's, we can be sure the 'Merry Widow' and the 'Pink Lady' did their shopping here.

It was the Art Nouveau structures at the Exhibition of 1900 which first focused public attention on the new mode, occasioning also that rapid Parisian vulgarization which brought its early end. At the exhibition, besides the crude but conspicuous things designed by Binet and Dulong that have been mentioned, there was the Pavillon Art

Nouveau Bing by Georges de Feure (1868–1928), a designer rather than an architect, which had rooms by Edward Colonna, back from working for Tiffany in America, and others of the best artists and craftsmen employed by Bing; but their exhibits represented decoration, not interior architecture properly speaking. However, by 1900 the Art Nouveau was not at all the strictly Parisian manifestation that it must have seemed to most of those who visited the exhibition. The Germans, notably, had already taken it up with great enthusiasm, beginning about 1897.

The Studio Elvira of 1897–8 in Munich by August Endell (1871–1925) had a plain stucco façade cut by a few strategically placed windows of varied shape; but this façade was splashed across the centre with a very large abstract relief of orientalizing character resembling something halfway between a dragon and a cloud. Endell's studio, if not the first manifestation of the Art Nouveau in Germany, was certainly the most striking; moreover, it followed immediately upon the showing of Van de Velde's Lounge at the Dresden Exhibition of 1897. Already, however, in that portion of the Wertheim Department Store in Berlin in the Leipzigerstrasse which was begun in 1896, Alfred Messel (1853–1909) had used a great deal of exposed metal and glass, and he had also modified the stylistic detail towards the Art Nouveau. This was five years before Horta designed the Innovation Department Store in Brussels and ten years earlier than Jourdain's Samaritaine in Paris. Messel made the spacing of his heavily moulded masonry piers quite wide and opened up completely the bays between. The result was at least as close to Sullivan's Gage Building of 1898–9 as to the Paris department stores of a decade later. In those portions of this department store that Messel added in 1900–4, however, the façades, although highly stylized, were of essentially Late Gothic character and quite remote from the Art Nouveau.

In 1899 Van de Velde moved from Paris to Berlin. There he designed the Hohenzollern Kunstgewerbehaus, a shop parallel to Bing's Maison de l'Art Nouveau in Paris in its interests and its activities. In the next year he carried out the Haby Barber Shop and the Havana Cigar Store, two of the most extravagant of all Art Nouveau shop interiors. With the opening of the new century, however, in his full-scale architecture Van de Velde moved almost as rapidly away from the Art Nouveau as did Messel, although in a different direction (see Chapter 20). By this time strong counter-influences were reaching Germany from Glasgow and Vienna.

Although not disdaining the Art Nouveau as completely as did the English and the Americans, the Austrians showed little of the enthusiasm of the French and the Germans. There is in Vienna one block of flats [5] of about 1900 so completely Art Nouveau that it might well have been designed by Horta himself. But the leading Austrian architects, old and young, reflected the new Belgian mode only with considerable diffidence and restraint. Otto Wagner (1841–1918), long a well-established academic architect and indeed Professor of Architecture at the Akademie, introduced more and more Art Nouveau detail in the Stadtbahn stations that he built over the years 1894–1901, most notably in the one at the Karlsplatz with its curved metal frame and inset floral panels. However, even this seems tentative and hardly rivals in interest Guimard's contemporary Métro stations in Paris.

Wagner's so-called Majolika Haus, a block of flats at 40 Linke Wienzeile designed about 1898, is far more distinguished and original (Plate 138A). Although the ironwork of the balconies and so forth is characteristically curvilinear and the faience plaques that completely cover the wall are decorated with great swooping patterns of highly colourful flowers, the architectonic elements of the façade are nevertheless very crisp, flat, and rectangular. That Vienna would very shortly become the focus of a reaction against the Art Nouveau does not seem surprising in the light of this façade. Moreover, on an office building erected in the Ungargasse for the firm of Portois & Fix in 1897 by Max Fabiani (b. 1865), who had been Wagner's assistant in 1894–6, the coloured faience slabs which sheathe its surface are arranged in a purely geometrical chequer-board pattern; only the ironwork has a slightly Art Nouveau flavour. At this particular date it would be hard to say here whether Art Nouveau influence was arriving or departing but for what other architects in Vienna were doing.

For example, in the design of the art gallery built in the Friedrichstrasse in Vienna in 1898–9 for the Sezession, a newly founded society of artists in revolt against the Academy, J. M. Olbrich (1867–1908) seems to have been inspired more by the façade of Townsend's Whitechapel Art Gallery – only just begun but already published as a project in the *Studio* in 1895 – than by the work of the Belgians or the French, which had influenced him strongly in the immediately preceding years. The pierced dome of floral metal-work alone vies in virtuosity with Horta or Guimard, and the pattern of this is actually quite English in character. The bronze doors are by Gustav Klimt, an Austrian Post-Impressionist who can be grouped, up to a point, with the Dutch, Belgian, Norwegian, and Swiss Post-Impressionists mentioned earlier (see Chapter 16). Olbrich was called to Darmstadt in Germany to work at the artists' colony sponsored there by the Grand Duke Ernst Ludwig in 1899 and Darmstadt, like Vienna, soon became a centre of reaction against the Art Nouveau under his leadership (see Chapter 20).

Both in Vienna and in Darmstadt the influence of the Scottish designer Mackintosh helped most to crystallize an alternative mode. Mackintosh first exhibited a room on the Continent at Munich in 1898, the same year that Baillie Scott was called by the Grand Duke to decorate an interior in the palace at Darmstadt. In 1900 Mackintosh was invited to design a room in the Sezession Exhibition in Vienna. That exhibit undoubtedly encouraged Viennese architects, already diffident towards the Art Nouveau, to turn more sharply away from it. This Adolf Loos (1870–1933) had already done in designing a completely rectilinear shop interior in Vienna in 1898. Loos, Wagner after about 1901, and Wagner's pupil Josef Hoffmann (1870–1956) were all leaders in the international reaction against the Art Nouveau (see Chapter 20). The position of Mackintosh, however, is rather hard to state so categorically and must be considered here in more detail.

At home in Scotland Mackintosh's early decorative work of the mid nineties approached Continental Art Nouveau more closely than that of any other Briton, not excluding Townsend. Indeed, he was castigated by his compatriots and his English contemporaries for participating in so exotic a movement. But Mackintosh also came nearer to possessing genius than most of the men of his generation associated with the Art

Nouveau, not even excluding Horta. That genius, all the same, was of so ambivalent a nature that he could seem for a few years to go along with the general stream of Continental fashion and yet, almost at the very same time, provide also a real protest against its excesses and its superficialities by the craftsmanlike integrity and the almost ascetic restraint of his best work. That protest the Austrians and the Germans were not slow to heed.

Mackintosh made his first mark in Glasgow, which had earlier been the home of the highly original 'Greek' Thomson (see Chapter 4). By the nineties, moreover, interest in contemporary French painting was probably livelier there than it was in London. But Glasgow was also as notorious as Chicago, that major focus of architectural achievement in the America of the nineties, for its presumed philistinism. Touches of Mackintosh's hand can be distinguished in work of the office of John Honeyman (1831–1914) and his partner Keppie, where the young architect was employed at the start of his career, notably in the Martyrs' Public School in Glasgow of 1895. But it was in the decoration of the first of a series of Miss Cranston's 'tea-rooms' (*scottice*, restaurants), the one in Buchanan Street remodelled by him in 1897–8, that Mackintosh's personal talents were first effectively exploited. His very earliest decorative compositions and the murals that he and his wife provided here, full of heavy and ambiguously Gaelic symbolism, are parallel to, rather than derivative from, the work of the Belgians. They are, in fact, much closer to the drawings of Beardsley and the paintings of Toorop and Munch than to the plant-like ironwork and almost Neo-Rococo carved stone ornament characteristic of Horta. But the same long swinging curves are present, the same linearity, and the same rejection of all conventional stylistic reminiscence.

In this same year 1897 Mackintosh's firm had the good fortune to win the limited competition for the Glasgow School of Art with a project that was entirely their young designer's (Plate 132A). Thus he very soon had an opportunity to prove himself architect as well as decorator in a way that only two or three of the Europeans associated with the Art Nouveau had been able to do up to this point. The school was built during the next two years, just as Horta was finishing his Maison du Peuple in Brussels. The only element in the design that relates to the contemporary Art Nouveau of the Continent is the ironwork. This is quite incidental to the major architectonic qualities of the building, moreover, since it is purely decorative, not structural. It is also extremely restrained in its abstract curves, like Fabiani's of this date in Vienna, and quite devoid of vegetable or floral reminiscence.

The entrance to the Glasgow Art School seems to derive from Webb, but, like that of Townsend's contemporary art gallery in London, it is rather less traditional in character than Webb's work of this period. The somewhat wilful asymmetry and the plastic elaboration of the central part of the façade contrast nevertheless with the straightforwardness of the general treatment. There are two ranges of very wide studio windows – reputedly derived from a Voysey project – like 'Chicago windows' but larger, with the reinforced-concrete lintels above them frankly exposed, and little else in the whole composition. To later eyes this façade, expressing so clearly the uncomplicated plan that it fronts, tends to appear deceptively simple and obvious. But Mackintosh's

very sensitive proportions and the delicate touches of linear detail provided by the ironwork create a design at once very direct and very subtle.

The north end of the building is a tall plain wall of rather small-scaled random ashlar broken only by a few strategically spotted windows of various shapes. At once medievally dramatic and quite abstract, this façade makes one appreciate all the more the almost classical serenity and horizontality of the main front. The Art School is clearly the manifesto of an architectural talent of broad range and great assurance – very different indeed from that of Voysey.

Mackintosh was not alone in Glasgow in these years. A real 'school' existed, chiefly in the field of decoration, of which George Walton was another notable exponent. Like Baillie Scott and Ashbee, Walton had some success as an architect in England (see Chapter 15) as Mackintosh did not, even though he executed a few interiors below the Border. But local support was not what it should have been for any of them in either Scotland or England. While the Art School was in construction, however, Mackintosh was asked in 1898 to provide the already-mentioned room in Munich, first of many that he showed at various exhibitions in Germany and Austria. This interior was very different indeed, both in the basic rectangularity of the forms and in the delicacy of the membering, from Van de Velde's Art Nouveau Lounge at the Dresden Exhibition of the previous year. Thus, even before Van de Velde reached Berlin in 1899, a new line of influence from Glasgow into Germany – and soon into Austria also – was established whose general tendency was in sharp opposition to the lusher currents flowing from Brussels and Paris.

When Olbrich settled in Darmstadt – just *before* Mackintosh's room was shown at the Sezession – he also rejected almost completely in the work he carried out at the Grand Duke's Art Colony the still slightly Art Nouveau leanings – in any case already closer to the English Townsend than to Horta or Van de Velde – of his newly completed Sezession Building (see Chapter 20). Only his Pavilion of the Plastic Arts of 1901 at Darmstadt retained curved elements, and those were structural rather than merely decorative. The general rectangularity and the broad horizontal windows of the Ernst Ludwig Haus, a block of artists' studios also completed by Olbrich in 1901, suggest comparison with Mackintosh's Glasgow School of Art. Whether or not, in fact, Olbrich knew Mackintosh's building – he may well have seen drawings if not photographs of it – his approach here was certainly very similar.

Mackintosh had a good many further opportunities as a decorator, both at home and abroad, but only too few commissions to design whole buildings. However, his two houses near Glasgow, Windy Hill at Kilmacolm of 1899–1901 and Hill House at Helensburgh of 1902–3, are both very notable. Externally they have a certain generic similarity to Voysey's, with their moderate pitched roofs of dark slate, rough-cast walls, and plain stone trim. His prototypes are not English but Scottish, however – the simple seventeenth-century houses of the minor lairds. As one would expect from his interiors, moreover, the façades of Mackintosh's houses are much more carefully and abstractly composed than Voysey's; they even include some simple geometrical features that are not at all reminiscent of the past in their design. Like Voysey's houses, Mackintosh's show no real novelties in planning, although the disposition of the rooms is always straightforward

and commodious. The interiors are very original and rather less forced than those he was producing for exhibitions on the Continent.

Mackintosh built very little after 1903 except the Scotland Street School of 1904 in Glasgow, the north wing of the Glasgow Art School in 1907–8, and the finest of the various tea-rooms that he remodelled for Miss Cranston. This was the Willow Tea Room in Sauchiehall Street of 1904, for which he remade the façade as well as reorganizing the interior. Internally this tea-room was arranged on several interrelated levels subdivided by ingenious screenwork; the exterior was a flat surface of white stucco cut by broad horizontal openings, one to a storey. The Scotland Street School is equally straightforward in design, the rather plain façade with its ranges of horizontally shaped windows being flanked by rounded stair-towers articulated into continuous stone grids by mullions and transoms.

The north wing of the Glasgow Art School is more remarkable, quite worthy of the original front but much more stylized (Plate 135A). Where the front is strongly horizontal the new end façade, like that on the south, is markedly vertical, in part because of the way the ground falls off. But the tall oriels, glazed at the outer plane of the stonework, are striking features, and the whole composition is tense and dramatic. The library inside is a *tour de force* of spatial subdivision somewhat like the Willow Tea Room. Most notable is the way the rectangular stick-work makes manifest the complex articulation of the total volume. This sort of handling of interior space was unique up to this time as a product of conscious design, although already present inside Paxton's Crystal Palace in the mid nineteenth century. Certainly there is no evidence here of a decline in Mackintosh's creative powers; indeed, quite the contrary. Yet this library proved to be his swan song; for want of further commissions Mackintosh's career all but closed at much the same time that the Art Nouveau was coming to an end on the Continent. Not since Ledoux perhaps had so great a talent been thus thwarted by circumstances, although just what the thwarting circumstances were, other than Mackintosh's own temperament, is not so evident as in the case of the revolutionary French architect.

The Art Nouveau, so extensively propagated by exhibitions, is often thought to have terminated with an exhibition, that held at Turin in 1902. This is more than a slight exaggeration, as various already mentioned buildings executed as late as 1911 will have made evident. Yet after the early years of the century the decline of the Art Nouveau was almost universal except in provincial places and in outlying countries such as those of Latin America and eastern Europe. At Turin the Belgian section had characteristic Art Nouveau interiors by Horta. Mackintosh, wholly detached by now from the Art Nouveau, contributed a Rose Boudoir, typically light in colour and delicate in line with the predominant verticals and horizontals relieved by little abstract knots, so to say, of curvilinear decoration. Raimondo D'Aronco (1857–1932), the Italian architect responsible for the principal pavilions, wavered between a rather plastic, somewhat Neo-Baroque, version of the Art Nouveau, not unrelated to the seventeenth-century work of the great local architect Guarino Guarini, and a crisper mode much influenced by Mackintosh and the Viennese.

D'Aronco's finest building, however, was not at Turin but the Pavilion of Fine Arts that he designed for the Udine Exhibition the next year. Moving sharply away from the turgidity of much of his work at the earlier exhibition, he produced for Udine a façade that was unified in design, frankly impermanent in its materials, and at once festive in spirit and dignified in tone. This was a most distinguished piece of exhibition architecture in a period when leading designers gave a great part of their attention to such rather ephemeral things – largely, doubtless, because so few opportunities to build permanent structures came their way. In Istanbul, D'Aronco built a small mosque in 1903, prominently located by the Galata Bridge, and also several blocks of flats that signally fail to maintain the promise of his Italian exhibition buildings. The very awkwardly sited mosque, raised on top of an existing structure, is as Viennese in character as the Udine pavilion.

Other Italian architects, however, remained faithful for a few years to the *stile floreale*, their version of the Art Nouveau. In Milan the Casa Castiglioni, a *palazzo* or mansion-like block of flats at 47 Corso Venezia built by Giuseppe Sommaruga (1867–1917) in 1903, is a very large and ponderous example. The detail is extremely bold, inside and out, the materials rich, and a very large part of the interior is given up to a monumental stair-hall of almost Piranesian spatial complexity. A Milanese hotel at 15 Corso Vittorio Emmanuele of 1904–5 by A. Cattaneo and G. Santamaria is of a comparable extravagance. Finer perhaps, certainly simpler, is the Casa Tosi of 1908 at 28 Via Senato in Milan by some unknown hand.

To judge from the rather *stile floreale* character of some work of this period in Latin America, Italians as well as Iberians may well have carried the Art Nouveau there. In Cuba and Brazil, especially, memories of Colonial exuberance encouraged a profusion of carved or moulded ornament beyond even the excesses of the French around 1900. The most prominent individual example, but not the most characteristic, is the Palacio de Bellas Artes in Mexico City begun for President Diaz by Adamo Boari and eventually completed about 1930 by Federico Mariscal; this is 'Beaux-Arts' – not inappropriately, perhaps – in all except its detailing; in the latest portions this reflects the Paris of the Exposition des Arts Décoratifs of 1925 rather than the Art-Nouveau Paris of 1900.

In Spain itself the international current of the Art Nouveau was not very influential outside Barcelona. Gaudí, whose earlier work of the seventies and eighties has already been described (see Chapter 11), continued to be as much apart from the contemporary Spanish architectural scene as he was from the international Art Nouveau. His finest late works, moreover, all but post-date the demise of the Art Nouveau in the major European capitals. Nor is there any such close, if ambivalent, linkage between Gaudí's career and the general rise and fall of the mode as in the case of Mackintosh. One can only say that his personal style is more closely related to the Art Nouveau than to the new stage of modern architecture that was already succeeding it by the time he produced his final masterpieces. The premonitory character of his early ironwork has been discussed and illustrated already (Plate 96B).

Gaudí's work on the church of the Sagrada Familia [6] in Barcelona went on more or less continuously from 1884 to 1914 and began again in 1919 after the First World War.

The most conspicuous portion that has so far been executed, one of the transept façades, was designed and largely built in the nineties. Dominating Barcelona with its four extraordinary towers – not finally completed until after Gaudí's death in 1926 – this façade, begun in 1891, breaks quite sharply with the Neo-Gothic of Villar's crypt and his own chevet. The portals with their steep gables have a generically Gothic *ordonnance*; but the extraordinary profusion of sculpture, mostly executed after 1903, gives a highly novel flavour. While conventional enough as regards the figures, this is otherwise either naturalistically floral or else meltingly abstract. It resembles the Art Nouveau in many minor details, but is generally bolder in scale, more fully three-dimensional, and, in places, somewhat nightmarish.

Although only about two-thirds as tall as the cluster of towers intended by Gaudí to rise over the crossing, the four openwork spires above this façade – with the two in the centre taller than those on the sides – reach a wholly disproportionate height in relation to the roof that should ultimately cover the still unbuilt transept. At the top they break out into fantastically plastic finials whose multi-planar surfaces are covered with a mosaic of broken tiling in brilliant colours. The prototypes for these finials are the chimney-pots of the Palau Güell, but here their note of free fantasy is raised to monumental scale. The inspiration of the towers, so remote in character from anything that the Art Nouveau ever produced, came from certain native buildings which Gaudí had seen in Africa: these strange primitive [7] forms he first exploited in a project of 1892–3 for the Spanish Franciscan Mission in Tangier which was never executed.

In posse the Sagrada Familia is perhaps the greatest ecclesiastical monument of the last hundred years; beside it such a suave late example of monumental Neo-Gothic in England as Liverpool Cathedral, begun by Sir Giles Gilbert Scott in 1903, lacks both vitality and originality of expression, if not nobility of scale. However, Gaudí's church still remains a fragment, and a very incoherent one at that, even though he prepared in 1925, the year before his death, a brilliant new project for the nave. Gaudí really stands or falls by the few secular buildings that he was able to carry to completion, beginning with the Palau Güell of 1886–9 (Plate 96B), and not, as most of his compatriots still assume, by the unrealized – perhaps unrealizable – plans for the Sagrada Familia. (Construction now goes forward, however, on the other transept.)

Gaudí's next Barcelona mansion after the Palau Güell, that built at 48 Carrer de Casp for the heirs of Pedro Mártir Calvet in 1898–1904, is much less impressive. Baroque rather than medieval in its antecedents, this is interesting chiefly for the detailing of the ironwork; but even that is no more remarkable here than that at the Palau Güell of a decade earlier. It is of interest, however, as illustrating the support which Gaudí received all along from his fellow citizens, that the Casa Calvet was awarded a prize in 1901 as the best new façade in Barcelona, quite as Guimard's Castel Béranger was premiated three years earlier in Paris.

A wholly new spirit, quite comparable in its total originality to the Art Nouveau, first appears in the work that Gaudí did for Don Eusebio Güell at the Park Güell (now the Municipal Park of Barcelona), carried out over the years 1900–14, and in the walls and the gate he built in 1901–2 for the suburban estate of Don Hermenegildo Miralles in

Las Corts de Sarriá. In the latter all the forms are curved and no stylistic reminiscence whatsoever remains, but it is a production of minor importance compared to the park. The park is mostly landscaping, but partly architecture in that it includes several small buildings and much subsidiary construction. A sort of Neo-Romantic naturalism, exceeding in fantasy that of the most exotic landscape gardening of the eighteenth century, controls the whole conception. Sinuous and megalomaniac near-Doric colonnades of concrete support a sort of flat vault that is of great interest technically;[8] yet these colonnades also suggest artificial ruins of the eighteenth-century sort raised to giant scale. The other porticoes and grottoes, however, recall no architecture of the past. Their rubble columns seem rather to emulate slanting tree-trunks, but in fact their profiles were worked out statically with the most careful study of the forces involved.

The ranges of curving benches surrounding the great open terrace over the Doric hypostyle, although covered with a mosaic of the most heterogeneous bits and pieces of broken faience, seem like congelations of the waves of the sea; the roofs of the lodges, also tile-covered, toss in the air like cockscombs. A strange biological plasticity, rather like that of the small-scale carved detail of Horta's or Guimard's buildings very much enlarged, turns whole structures into malleable masses as in some Gulliverian dream of vegetable or animal elements grown to monumental size. Everything but the ironwork is moulded in three dimensions, and even the ironwork tends towards a heavy scale more comparable to that of the structural members of metal used in Belgian or French work of the day than to the delicacy of Art Nouveau decorative detail.

Gaudí's major secular works belong to the same years as the execution of the park. It is hard to believe that the Casa Batlló at 43 Passeig de Gracia in Barcelona, a small block of flats, is not a completely new structure but a remodelling carried out in 1905–7. This fact perhaps explains the relative flatness of the façade. Yet Gaudí made the lower storeys extraordinarily plastic and open, using a bony articulation of curvilinear stone members, and the high roof in front that masks the roof terrace is of even more cockscomb-like character than those on his park lodges (Plate 136). The upper storeys of the façade glitter with a fantastic plaquage of broken coloured glass considerably more subtle in tonality than his usual mosaic of faience fragments.[9] But architecturally the façade is handled more like Horta's, with most of the windows nearly rectangular even though bulging balconettes of metal project at their bases. The effect, as with Horta, is slightly Neo-Rococo. But the sort of Rococo which this façade recalls is not circumspect French eighteenth-century work but the lusher mode that was exploited in Bavaria and Austria – and still more appositely in Portugal and Spain. The entire wall surface seems to be in motion, and all its edges waver and wind in a way that even interior panelling did rarely in eighteenth-century France. This effect of total motion is even more notable in the interiors, which seem to have been hollowed out by the waves of the sea.

The rear façade of the Casa Batlló is remarkable for its openness. The wide window-walls in the paired flats open on to sinuous balconies extending all the way across. Above, there is a simpler plastic cresting than on the front; over this the curious forms of the chimney-pots provide a range of abstract sculptural features covered with polychrome tiling, always a favourite terminal theme of Gaudí's.

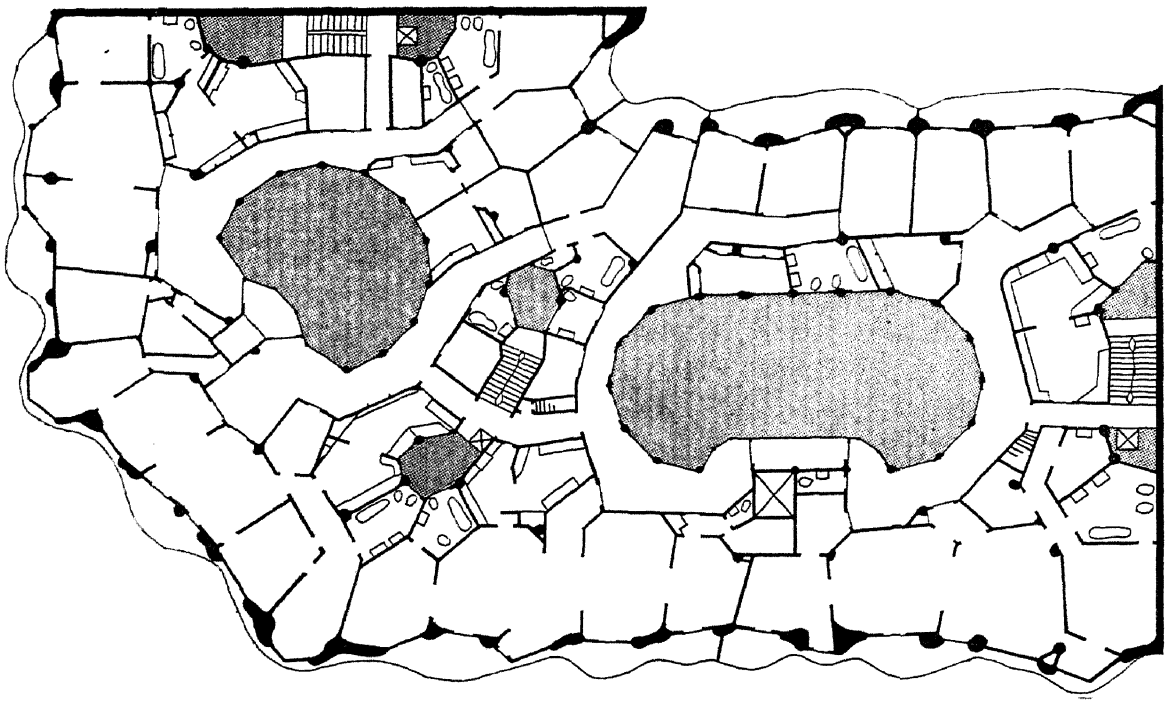


Figure 35. Antoni Gaudí: Barcelona, Casa Milá, 1905–10, plan of typical floor

Much larger than the Casa Batlló is the edifice built for Roser Segimon de Milá in 1905–7 at 92 Passeig de Gracia, appropriately known in Barcelona as 'La Pedrera' (the quarry). Surrounding two more or less circular courts, this large block of flats occupies an obtuse corner site, and the entire plan is worked out in curves as well as all the elements of the exterior (Figure 35). The façade of the Casa Milá is not a thin plane, curling like paper at the edges and pierced with squarish holes like that of the Casa Batlló; instead ranges of balconies heavier than those on the rear of the Casa Batlló sway in and out like the waves of the sea beneath the foamlike crest of the roof, making the whole edifice a very complex plastic entity (Plate 137A). From a distance La Pedrera looks as if it were all freely modelled in clay; in fact, it is executed in cut stone with boldly hammered surfaces that appear to result from natural erosion.

There is no external polychromy of glass or tile here, and the frescoed colour used on the court walls has suffered such serious deterioration that it is difficult to know what it was like originally. On the other hand, Gaudí's detail was never more carefully studied nor more consistent; there are no straight lines at all, and in the forms of the piers rising from the ground to support the balconies of the first storey he suggested natural formations with real success (Plate 135B). These elements look as if they had been produced by the action of sea and weather rather than by the chisel, quite as does much of the mid-twentieth-century sculpture of Henry Moore.

The marine note is seen at its strongest and most naturalistic in the ironwork however. Strewn over the balcony parapets and across various openings, like seaweed over the rocks and sand of the seashore, the railings and grilles are full of intense organic vitality with none of the graceful droopiness of Guimard's Métro entrances. Gaudí's

metalwork frequently suggests the work of various mid-twentieth-century sculptors in welded metal, quite as his handling of masonry does later sculpture in stone. Indeed, his iron grilles often exceed such sculptors' metalwork in richness and variety of form, as also in the fine handcraftsmanship of the execution.

The detailing on the Casa Milá, whether of the masonry or the ironwork, avoids the nightmarish overscaling of the somewhat similar elements at the Parc Güell, and also the coarseness of the broken faience mosaic surfaces that he used so much there and elsewhere but here restricted to the roof-tops. As regards the masonry, moreover, it is really wrong to speak of detailing, for the very fabric of the structure, not just its edges and its trimmings as on the Casa Batlló, has been completely moulded to the architect's plastic will. Whether or not it be correct to consider the Casa Milá an example of the Art Nouveau – and technically it is not – La Pedrera remains the greatest masterpiece of the curvilinear mode of 1900, rivalled in quality only by the finest of Sullivan's skyscrapers (Plate 119), which it does not, of course, resemble visually at all.

Despite the esteem in which his work has always been held by his fellow-citizens of Barcelona, Gaudí had few local imitators of consequence. However, such detailing on early twentieth-century buildings there as may appear at first to be conventionally Art Nouveau is often in fact Gaudian, but very corruptly so. Only his assistant J. M. Jujol Gibert (1879–1949) seems to have understood Gaudí's mature style. The house by Jujol at 335 Diagonal in Barcelona, while much smaller and simpler than the Casa Batlló and the Casa Milá, is of a quality worthy of comparison with Gaudí's own best work. The big Palau de la Musica Catalana, built by Luis Domenech Montaner (1850–1923) in 1908, is a very extravagant example of the architecture of the period, bold and coarse and rich, but with none of Gaudí's personal flair and integrity.

In Glasgow Mackintosh after 1908 was a prophet with far less honour than 'Greek' Thomson had received there in an earlier day. But the counter-current that he had helped to set going on the Continent was in full swing, particularly in Austria and in Germany (see Chapters 20 and 21). Even in Horta's own Brussels, Josef Hoffmann had been called from Vienna as early as 1905 to build the suburban Stoclet mansion (Plate 154A) at 373 Avenue de Tervueren (see Chapter 21).

Despite the ephemeral nature of much of its production and the completeness with which it was ultimately rejected everywhere, the Art Nouveau has very great historical importance. The Art Nouveau offered the first international programme for a basic renewal of architecture that the nineteenth century actually set out to realize. Most earlier programmes, moreover, even if not primarily revivalistic, aimed merely at the reform of architecture; this was still true of Voysey and his English contemporaries in these very years, though not, of course, of Sullivan and Wright, working in isolation in the American Middle West. Thus the Art Nouveau was actually the first stage of modern architecture in Europe, if modern architecture be understood as implying, before anything else, the total rejection of historicism.

The proto-modernity of earlier stages of nineteenth-century architectural development is almost always ambiguous, since the leaders of the various successive movements rarely intended to break with the past entirely. The characteristic ideal of

nineteenth-century architects, as of their late eighteenth-century predecessors, had been to react against what they considered the decadence of the building arts current in their day by returning to the principles of some earlier and supposedly purer or more vital age. The very considerable amount of innovation that many European architects before Horta introduced in their work was not exactly unconscious; but it was rather a matter of achieving personal expression by adapting old forms to new needs, new materials, and new methods of construction than of creating a wholly original modern style.

Well before the nineties a very few men had consciously sought absolute originality and total freedom from the disciplines of the past. But such architects found little or no public support for their programmes of architectural revolution nor even fellow-artists to share in their highly individualistic campaigns. After the relatively universal acceptance of the doctrines of Romantic Classicism there had followed chiefly a succession and a multiplication of divergences; now, in the nineties, a real pattern of convergence appeared. But this convergence was premature. The renewal of ornament and of the accessories of architecture outran the renewal of the more basic elements of the art of building towards which the technical developments of the nineteenth century had been so inevitably leading.

Thus the Art Nouveau stands apart both from the architecture of the preceding hundred years and from the modern architecture of the following fifty which extends down to the present. It did not bring the one to an end, as the profusion of so-called 'traditional' buildings of the early twentieth century makes very evident (see Chapter 24), nor did it provide much more than a preface to the major new developments that mark the early decades of the present century (see Chapters 18–21). That the Art Nouveau was completely rejected on principle by 'traditionalists' is not surprising: it was the first serious attack on the position they continued to maintain. But the very rapidity with which the Art Nouveau rose to popularity and descended to vulgarization encouraged its denigration in the name of 'taste' by almost all other architects soon after it reached its climax around 1900. In recompense, interest in the Art Nouveau began to revive early, by the early thirties, after a much shorter period of neglect than other phases of nineteenth-century architectural development have undergone and are still undergoing.

The place of the Art Nouveau in the story of modern architecture, if only as an episode of youthful wild-oat-sowing, is now well established. Most of its exponents actually lived long enough to receive in their later years embarrassing praise for youthful work they had quite disowned if not forgotten. It is a curious paradox that although most of the leaders of the Art Nouveau survived for decades – and Van de Velde died only in 1957 – not one except Gaudí[10] maintained after 1910 the position of relative pre-eminence that had been his in 1900. A wholly new cast of characters, many of them no younger, came to the fore in the first decade of the twentieth century; they constitute the first generation of modern architects, properly speaking.

CHAPTER 18

MODERN ARCHITECTS OF THE FIRST GENERATION IN FRANCE: AUGUSTE PERRET AND TONY GARNIER

No better name than 'modern' has yet been found for what has come to be the characteristic architecture of the twentieth century throughout the western world, and well beyond its confines also in Japan, India, and Africa, if not in Russia or several of the other Communist countries. Alternative adjectives such as 'rational', 'functional', 'international', or 'organic' all have the disadvantage of being either vaguer or more tendentious. Whether the Art Nouveau or such things as Sullivan's skyscrapers and Voysey's houses all truly belong, in their rather sharply differing ways, to a first stage of modern architecture or are transitional and prefatory may still be debated; but from the earliest years of this century several continuous lines of development can certainly be traced down to the present. These lines have been in the main convergent, and increasingly international in their wide acceptance. By stressing generic changes rather than specific achievements the development can be presented almost anonymously, somewhat as the nineteenth-century development of commercial architecture was outlined earlier in this book (see Chapter 14). But it is more humanistic, and at least as true to the detailed facts, to consider modern architecture as deriving from the individual activities of a few leaders rather than from some Hegelian historic necessity. Of those leaders one group, born in the late 1860s, constitutes the first generation; a group born some twenty years later forms a second generation; since the 1930s still another generation has come to the fore.

A somewhat similar succession of three generations could be distinguished in the case of Romantic Classicism, the last universal style in architecture. What sets the twentieth-century situation apart from that of the earlier period has been the marked prolongation of the activity of the first generation, two of whose leading members, Wright and Perret, lived on and remained active beyond 1950, and one of whom, Wright, is still in vigorous production today. The leaders of the second generation, who first moved towards the centre of the stage in the early twenties, are mostly still alive; two of them at least, Le Corbusier and Mies van der Rohe, are rather more productive today than earlier in their careers (see Chapter 21).

While some influence from their juniors can be noted in the later work of the modern architects of the first generation, a real difference between their approach to architecture and that of the second generation has continued. Those who have come forward since the mid thirties owe much to the first generation as well as to the second, yet they have also manifested some significant characteristics that are their own. The modern architecture of the last half-century may best be presented, therefore, in terms of the work of two successive generations of leaders, and then of the general production of the last few years since the Second World War. But modern architecture, even very broadly

interpreted, includes only a small fraction of all building production down to the war; the work of those who still considered themselves supporters of tradition in the twentieth century bulks much larger in quantity, even if it very rarely rivals the modern work in interest or quality (see Chapter 24).

The leaders of the first generation of modern architects have been great individualists to the last. It is therefore not easy to draw any general stylistic picture from their production, even for the years before the twenties when they were the only modern architects. The leaders of the second generation drew their inspiration, in most cases, not from one but from several of the older men; yet their work was so convergent that by the late twenties a body of doctrine had come to exist deriving partly from their theories and partly from their few executed buildings and their many projects. With the increasingly wide acceptance of this body of doctrine critics were soon ready to recognize the existence of a new style as coherent, as consistent, and almost as universally employed by younger architects everywhere as the Romantic Classical style had been at the opening of the nineteenth century (see Chapter 22).

Towards the constitution of this new style each of the great architects of the first generation had made notable contributions; yet their executed work, and even more their theories, remained independent of it. To appreciate that work only in the light of what they had in common with their juniors is to miss much of the richness and all of the idiosyncrasy of their achievement. In considering the work of these older architects for its own sake, what sets it apart from the Art Nouveau, whose protagonists were in many cases their exact contemporaries, must first be indicated and evaluated. For example, their rejection of ornament, at most but relative, provides only a minor and negative point of differentiation. In their positive preoccupation with structure and its direct architectonic expression, and also their reform and revitalization of planning concepts, however, they went much further than most of the Art Nouveau designers of 1900. It is true that such architects as Horta and Jourdain, when working with metal and glass, were concerned with the expression of structure, but that expression was usually more decorative than architectonic (Plates 132B and 133). Traditional materials, such as stone and brick, in the hands of Art Nouveau architects and their spiritual brothers often lost all their natural character, being treated like so much clay. The sense of materials, both new and old, and the determination of their proper use preoccupied all the leading architects of the first generation, something for which only the English and the Americans prepared the way in the nineteenth century.

The new importance of structure and its expression, the preoccupation with a particular building material, is nowhere more evident than in the work of Auguste Perret (1874–1954), the only great French architect of this generation. Associated as he was with the family contracting firm of A. & G. Perret, which specialized early in the use of reinforced concrete, he saw as his principal problem the development of formulas of design for concrete as valid as those so long established in France for building with stone. The other architects of his generation came more gradually and less wholeheartedly to the exploitation of new materials – it is paradoxical, for example, that the characteristic Art Nouveau interest in exposed metal construction came generally to an end about

1905 – and their work as a result is more various and less doctrinaire. Because of Perret's clear definition of his goal and his single-minded advance along a predetermined line, his somewhat limited architectural achievement may well be considered before the protean manysidedness of Wright's in America and the ambiguity of Peter Behrens's in Germany, not to speak of the important contributions of Wagner and Loos in Austria, and of Berlage and de Klerk in Holland (see Chapters 19, 20, and 21).

Auguste Perret came of Burgundian stock, but by the accident of his father's exile from France after the Commune he was born in Brussels. His education was entirely French. He left the École des Beaux-Arts to enter the family's building firm without waiting to receive the Government's diploma, somewhat as Wright went out into the practical world with but two years of engineering school behind him. His career began almost at once, for he built his first house at Berneval in 1890. Several blocks of flats and an office building in Paris followed in the next eight years; the Municipal Casino at St-Malo, built in 1899, was the first work of any real consequence. There he and his brother Gustave (1876–?) used reinforced concrete for an unsupported slab floor of 54-foot span. Executed otherwise in local granite and wood, this building has a certain bold simplicity as remote from 'Beaux-Arts' as from Art Nouveau work of the period.

Reinforced concrete,[1] that is concrete strengthened by internal reinforcing rods of metal, seems to have been invented by a French gardener named Joseph Monnier in 1849, but he used it only for flower pots and outdoor furniture. In 1847 François Coignet (1814–88) had built some houses of poured concrete without reinforcement; in 1852 for a house at 72 Rue Charles Michel in St-Denis, Seine, Coignet first employed his own system of *béton armé*, to use his term. That term has since remained current in French – the German term is *Eisenbeton*, the Italian *cimento armato*. During the next four decades ferro-concrete, to give it its simplest English name, was developed very gradually by Coignet and by François Hennebique (1842–1921) with no very notable architectural results. Detailed research is gradually revealing many instances of its early use by various men in different countries; but neither in the scale of its employment nor in the achievement of new and characteristic modes of expression does its history in these decades rival that of iron in the first half of the nineteenth century (see Chapter 7).

In 1894, just as the Art Nouveau was reaching France, ferro-concrete was used for the first time in a structure of some modest architectural pretension by J.-E.-A. de Baudot [2] (1836–1915) for a school in the Rue de Sevigné in Paris. This is overshadowed in interest, however, by the church he began to build in 1897. Saint-Jean-de-Montmartre at 2 Place des Abbesses in Paris has very little connexion with the Art Nouveau except for its drastic novelty. On the contrary, de Baudot employed for his concrete skeleton very much simplified Gothic forms following line for line, as has been noted, his master Viollet-le-Duc's second project of 1867 for the mausoleum of the Duchess of Alva but substituting ferro-concrete for iron. Like Viollet-le-Duc's projects in general, Saint-Jean is curious rather than impressive and not at all to be compared in intrinsic interest with Gaudí's Sagrada Familia. Worth noting, however, is the use of faience mosaic to decorate the concrete structural members, something de Baudot had already tried out on his earlier school. The authorities were dubious of the strength of de Baudot's structure,

as well they might have been considering the iron-like delicacy of the membering, and a hiatus of several years held up the construction after 1899, the church being completed only in 1902–4. As has been mentioned already, the contractor was Contamin working with Soubaux, his partner of the period.

Before Saint-Jean-de-Montmartre was finally finished in 1904, Perret had already demonstrated the architectural possibilities of the new material rather more effectively in the block of flats that he built in 1902–3 at 25 bis Rue Franklin in Paris. Despite the echo of the Art Nouveau already noted in the foliage patterns of faience mosaic filling the wall-panels on the exterior, most of the interest of the building resides in its structure and its planning. Like that of Anatole de Baudot's church, the structure is visibly a discrete framework, made up entirely of vertical and horizontal elements with no curved members of either Gothic or Art Nouveau inspiration. However, the concrete is nowhere exposed but always covered with glazed tile sheathing. Within the wall-panels the windows are crisply outlined by plain projecting bands of tile; this provides an early instance of that *encadrement*, or framing, on which Perret came to insist in all his work after the mid twenties.

The skeletal structure of 25 bis Rue Franklin allowed great freedom in planning (Figure 36). Around a small court, sunk into the front of the building, the principal living areas of each flat all open into one another, somewhat as in Wright's Hickox house of 1900 but with less spatial unification (Figure 31); the result is closer to Horta's treatment of the main floor of his Aubecq house of 1900 in Brussels (Figure 34).

The next year Perret built another block of flats at 83 Avenue Niel in Paris with an internal skeleton not of concrete but of metal, and façades of stone treated somewhat like those of his Art Nouveau flats of the previous year in the Avenue Wagram (see Chapter 17). He returned, however, at once to the use of ferro-concrete and rarely deserted it again.

The Garage Ponthieu, which was built in 1905–6 in the Rue de Ponthieu in Paris, is a much more striking example of the possibilities of the new material than the earlier blocks of flats; moreover, the concrete is here exposed (Plate 139A). Inside, galleries carried along both sides of the L-shaped space provide a second level for parking motor cars and the whole interior is almost as light and open as if it were built of metal, thus recalling a little de Baudot's church. The façade, likewise, is as skeletal as if executed with a metal frame. But Perret's determination, somewhat comparable to Sullivan's in the Wainwright Building in St Louis of fifteen years before, to organize the expression of a new type of construction along basically Classical lines is as evident as the maximal fenestration. The thin slab which projects at the top provides a sort of cornice and the range of small windows underneath it a sort of frieze, while the arrangement of the elements of the façade below is very formal indeed. The rose-window-like glazing of the big central panel is somewhat rudimentary and rather less Classical in feeling than the rest, but the essentials of Perret's concrete aesthetic are all adumbrated here as they were not in the more tentative block of flats in the Rue Franklin.

In the solid, marble-sheathed façade of the Théâtre des Champs Élysées in the Avenue Montaigne in Paris, Perret's largest and most conspicuous early work, his classicizing

intentions are even more evident, but the expression of concrete-skeleton structure is much less complete; these intentions are underlined, moreover, by the large stylized reliefs by Antoine Bourdelle that provide the only external decoration. Originally, in late 1910, the commission for this theatre was given to Van de Velde. He at once proposed that it should be built of ferro-concrete with the Perret firm as contractors. During the course of the following year Perret proposed various changes in the plan to make more practical its construction with a concrete skeleton. When he later offered an

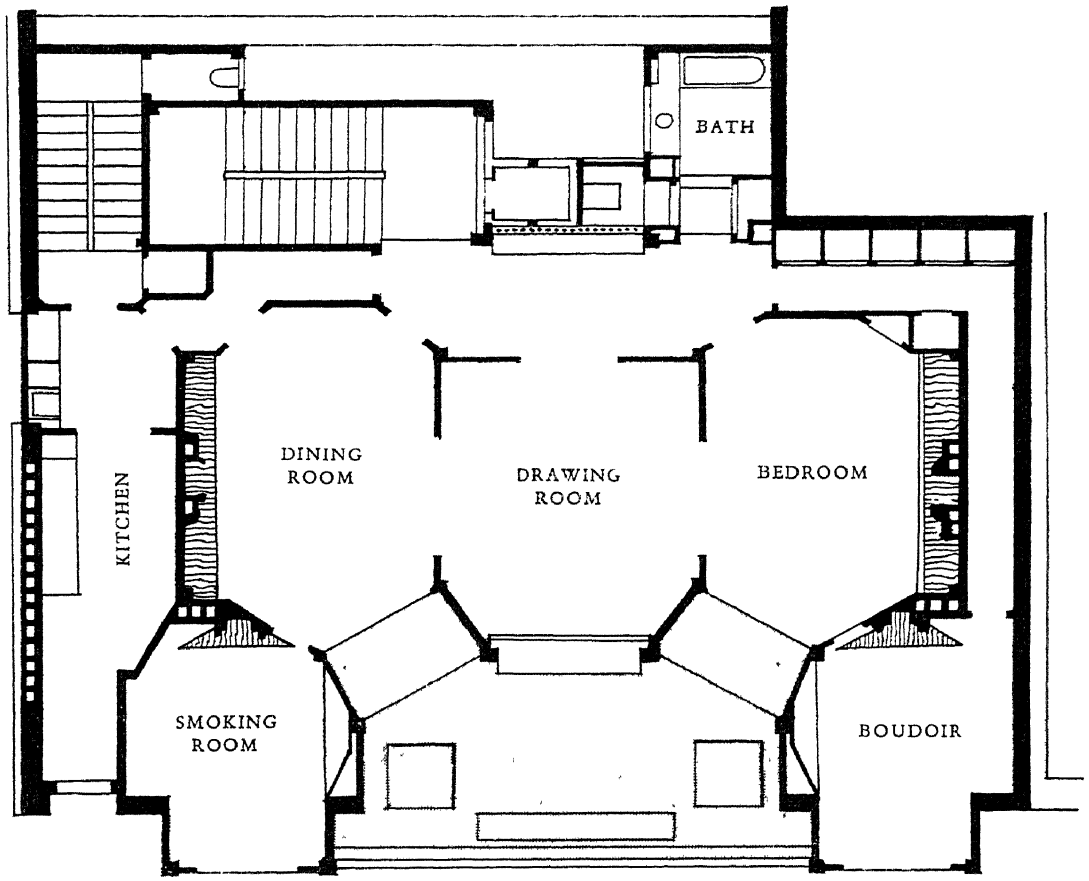


Figure 36. Auguste Perret: Paris, block of flats, 25 bis Rue Franklin, 1902–3, plan

alternative design for the façade this was preferred by Van de Velde because it seemed then so expressive of the underlying structure, as it hardly does to posterity. By September Van de Velde made a final report as consulting architect and withdrew completely. Needless to say, there has been controversy ever since as to the degree of Perret's responsibility for this major monument of twentieth-century Paris; as built, however, there can be little question that it is very largely of his design. How different a theatre by Van de Velde would have been is at least suggested by the one that he erected in 1914 for the Werkbund Exhibition in Cologne (see Chapter 20).

The foyer of the Théâtre des Champs Élysées expresses the possibilities of ferro-concrete in a more architectural way than do the interiors of the earlier block of flats and

the garage. The actual structural members of the skeleton are visible in the free-standing columns, as are also the beams that they support; the walls are very evidently only thin panels between the piers. A few simple mouldings are used to assimilate the new expression to the conventions of academic design – too few to satisfy contemporaries, though too many for later taste.

There is less clarity of expression in the great auditorium because of the profusion of murals contributed by various Symbolists and Neo-Impressionists – Maurice Denis and K.-X. Roussel most notably – and by the over-all gilding of the principal structural members, which are also elaborated by semi-Classical detailing. Even so, the fact that the dome is carried on the four pairs of tall slender columns is very evident, and the swinging curves of the successive balconies give early evidence of the ease with which ferro-concrete lends itself to bold cantilevering.

The presumed necessity of achieving monumentality undoubtedly compromised the purity of Perret's expression of structure throughout the Théâtre des Champs Élysées. During the War, which followed so soon after the inauguration of the theatre in 1913, an important industrial commission of Perret's produced what would be for the next generation of architects a more exemplary work. The warehouses built at Casablanca in North Africa in 1915–16 – there are also others there of 1919 – required no representational display; they are almost 'pure' engineering in concrete. But the lightness of their walls, pierced with abstract patterns formed by ventilating holes, and the elegance of their thin shell vaults of segmental section displayed the potentialities of a quite new structural aesthetic, at once delicate and precise, with no echoes at all of the massive masonry buildings of the past.

The interior of the Esders Clothing Factory at 78 Avenue Philippe-Auguste in Paris, erected just after the War in 1919, and several smaller industrial buildings for the metal-working firm of Wallut & Grange at Montataire, Oise, of 1919–21 were more readily studied by younger architects and, in the case of the Esders factory, much grander in scale than the North African warehouses. Even more elegant than the warehouses, and equally 'pure', was the atelier of the decorator Durand built in Paris in the Rue Olivier-Métra in 1922. This has a shell vault rising from the floor broken, along one side only, by a long skylight over widely spaced ribs that continue the curve of the vault.

By this time, of course, ferro-concrete was in general use for industrial building throughout most of the western world. In France the vast parabolic-vaulted aircraft hangar at Orly, Seine, designed by the engineer Eugène Freyssinet (b. 1879) in 1916, overshadowed in size and boldness anything built by Perret. This very exceptional utilitarian construction, magnificent in form yet quite without architectural pretension, was destroyed during the Second World War. To Tony Garnier's work in Lyons we shall turn later.

In America Frank Lloyd Wright used ferro-concrete for his modest E.Z. Polish Factory in Chicago in 1905, just as Ernest L. Ransome was completing the first mature example of a large plant of ferro-concrete frame construction, the United Shoe Machinery Plant in Beverly, Mass., begun in 1903.[3] All over the Middle West, moreover, grain elevators [4] were rising in the form of gigantic linked cylinders. In Switzer-

land the great engineer Robert Maillart (1872–1940) in his factories and bridges was using concrete in several new ways as different from the elevators as from the usual timber-like frames of the French and the Americans or the shell vaults of Perret and Freyssinet. Everywhere the importance of ferro-concrete as the prime building material of the twentieth century was receiving increasing recognition; for it was a material more universally available than structural steel and also so elastic in its potentialities that these have hardly even yet been adequately explored.[5] In the early twenties, when a younger generation of architects all over Europe turned their major attention to ferro-concrete as the most modern of building materials, Perret was the architect who had the most to offer them – how limited had been Wright's exploitation of concrete up to this time we shall shortly see (see Chapter 19). When Perret erected the church of Notre-Dame at Le

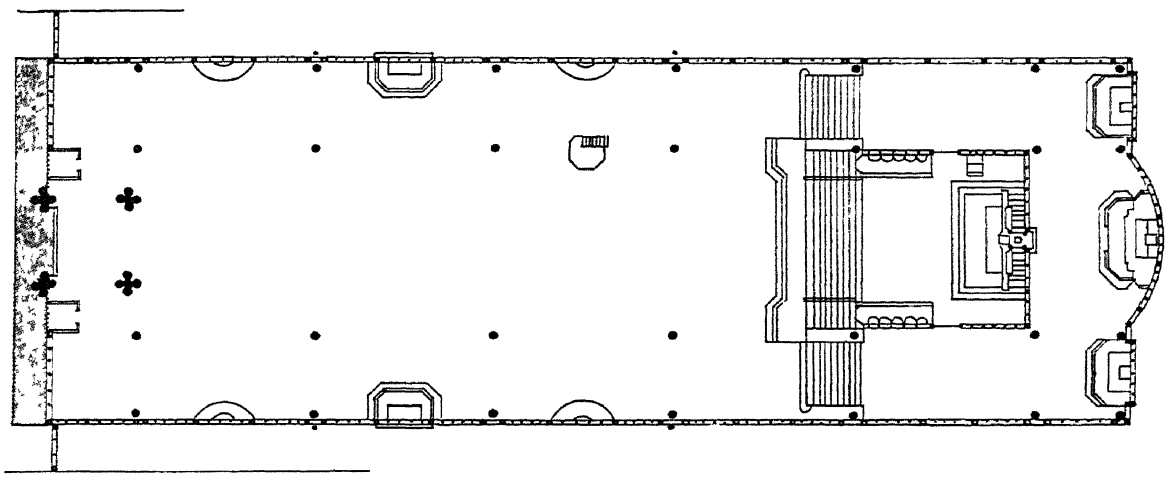


Figure 37. Auguste Perret: Le Raincy, S.-et-O., Notre-Dame, 1922–3, plan

Raincy, S.-et-O., near Paris in 1922–3 concrete came of age as a building material in somewhat the same way that cast iron had done in a series of major English and French edifices of the 1840s (see Chapter 7).

The Le Raincy church is not revolutionary in plan, being a basilica with aisles and an apse; unlike de Baudot's church, however, it has no specific elements of Gothic reminiscence in the interior (Plate 141). Instead it provides what the medieval builders of Saint-Urbain at Troyes or King's College Chapel in Cambridge had obviously sought to achieve, a complete cage of glass supported by a minimal skeleton of solid elements. The broad segmental shell vault of the nave, with smaller vaults running crosswise over the aisle bays in the Cistercian way, is carried on no walls at all but only on the slightest of free-standing columns reeded vertically by the forms in which they were cast (Figure 37). Quite separate from this supporting skeleton is the continuous enclosing screen of pre-cast concrete units, pierced and filled with coloured glass designed by Maurice Denis. This is carried round the entire rectangle of interior space and bowed out at the east end in a segmental curve to form a shallow apse behind the altar. Only at the front is the clarity of the conception compromised by the awkward impingement of the clusters of columns that shoot up to form the tower.

Deserting the dilute Classicism that was his natural bent, Perret allowed the clustered piers of his tower to rise into the sky, supporting nothing at the top, in order to approximate the outline of a Gothic spire. Even more than in the interior, where one is aware only of the lowest stage, the verticalism and the medieval suggestion of this feature, so over-ingeniously composed of standard ferro-concrete elements, seems quite at odds with the severe concrete-and-glass box that provides the body of the church. Few other ferro-concrete churches [6] of the twenties, least of all Perret's own Sainte-Thérèse at Montmagny, S.-et-O., of 1925–6 and other French ones by his imitators, rival Notre-Dame at Le Raincy. The largest and boldest, Sankt Antonius at Basel in Switzerland, built by Karl Moser (1860–1936) in 1926–7, seems somewhat heavy and factory-like. Its plain rectangular tower, however, rising free at one corner of the church, is much simpler and more original than Perret's spire and has been frequently and successfully emulated by other architects. Of quite a different order are the Expressionist churches of the German Dominikus Böhm, which have, in the long run, had a still wider influence (see Chapters 20 and 25).

Two remodelled Paris banks, one of 1922 for the Société Marseillaise de Crédit in the Rue Auber and another of 1925 for the Crédit National Hôtelier, gave evidence of Perret's capacity to extend the implications of ferro-concrete design to more conventional problems. These interiors are almost wholly devoid of ornament, and they largely depend for their effectiveness, like the foyer of the Théâtre des Champs Élysées, upon the careful proportioning of the exposed elements of the skeleton construction. In 1924 the Palais de Bois, a temporary exhibition building at the Porte Maillot in Paris, showed how this sense of direct structural expression could be exploited in a building all of timber. This was much more successful than the theatre that Perret built in 1924–5 for the Paris Exposition des Arts Décoratifs. Of a quite different order was the Tour d'Orientation at Grenoble, also of 1924–5. Here Perret was far happier in achieving something comparable to the richness of medieval spires with standard structural elements and pre-cast panels than in the tower of his church at Le Raincy, for this is much more structurally conceived and quite devoid of Gothic reminiscence in the outline.

The mid twenties also brought to Perret, by this time widely recognized in advanced circles as the leading French architect, several commissions for houses, chiefly for artists, in France and even as far afield as Egypt. Characteristically French in his preoccupation with large, not to say monumental, problems, house-design was not Perret's forte in the way it was that of his American and Austrian contemporaries Wright and Loos. Moreover by this date certain younger architects, particularly Le Corbusier and two or three others in Paris, had set under way a revolution in domestic architecture as drastic as Wright's of twenty-five years earlier (see Chapter 22).

Perret's best houses, such as the Mouron house at Versailles of 1926 or the Nubar house in the Rue du 19 Janvier at Garches of 1930, have an almost eighteenth-century dignity and serenity. The 'stripped-Classical' apparatus of terminal cornices, *encadrements* around the openings, and occasional free-standing columns is doubtless logical as an expression of the construction, but it is also very conservative in effect. Yet the ferro-concrete construction encouraged Perret to introduce very wide openings leading out

on to surrounding terraces and to open up the main living areas even more than he had done in the flats of 1902–3 in the Rue Franklin. Such treatments were still rather advanced for Europe, however common they may have been in America for a quarter of a century and more. The characteristic quality of Perret's domestic work is seen at its best in a small block of flats at 9 Place de la Porte de Passy in Paris facing the Bois de Boulogne that he built in 1930 (Plate 139B). This has a façade towards the park so superbly proportioned that it might almost be by Schinkel and a flow of space inside the individual flats that is worthy of Wright, although much more formal in organization.

Now Perret began to receive the official commissions that are generally given in France only to men well on in years. The building designed in 1929 that he erected for the technical services of the Ministry of Marine in the Boulevard Victor in Paris is one of the largest and most typical of his later works (Plate 140B). The complex rhythms and subtle three-dimensional play of this façade are entirely produced by the actual structural elements. The skeleton divides the long façades into a series of horizontal panels within which are set the vertical frames of the windows separated by pre-cast slabs; in one storey the windows even extend the full width of the bays.

To a considerable extent Perret had succeeded in achieving what he had long consciously sought, that is, a vocabulary of design in concrete as direct, as expressive, and as ordered as the masonry vocabulary of the seventeenth and eighteenth centuries – a *style Louis XX*, so to say – still very French in a quite traditional way, yet unmistakably of this century. In the Garde Meuble or National Furniture Storehouse in the Rue Croulebarbe in Paris, begun the next year, the vocabulary is – from principle – all but identical; yet fewer windows and more solid panels were necessary here so that the general effect is flatter and blanker. The curved colonnade across the open side of the court is almost archaeologically reminiscent of the eighteenth century, despite the breadth of its spans and the ingenuity of its detailing. The small concert hall of 1929 in the Rue Cardinet for the École Normale de Musique is less pretentious but also less impressive.

Concrete to Perret, after all these years of employing it, was not a crude or a substitute material. By the use of coloured aggregates which he found various means of exposing he was able to vary the texture and colour of his poured and pre-cast elements with considerable subtlety and elegance. In the later buildings the workmanship is usually of the highest quality – it was by no means so in the early twenties – with arrises brought to a sharp edge in pure cement and such classicizing details as the flute-like facets on piers and the capital-like treatment of their tops carried to a finish comparable to that of chisel-cut freestone.

Thus Perret was eventually able to avoid the industrial brutality of much work in concrete where the material is left as it comes from rough timber forms with crumbling arrises and pockmarked surfaces. Such lack of finish is acceptable in large-scale engineering work but certainly awkward when seen close to as in Notre-Dame at Le Raincy. On the other hand, Perret kept well away also from that slickness of surface – especially popular with younger architects in the twenties – that is produced when concrete is covered with a smooth stucco rendering and painted.[7] Such slickness is, of course, generally very

soon lost as the original surface grows cracked and stained; only too rarely is it properly maintained by frequent patching and repainting. Concrete was to Perret a worthy material, like stone, and therefore deserved the effort and the cost required to give it an expressive finish requiring little or no maintenance.

The reticulated wall system of the big government buildings was also used for a block of flats at 51–55 Rue Raynouard, built in 1932, where Perret himself lived and also maintained his atelier. The necessary adaptation of his formalized open planning to a trapezoidal site produced suites of interior space of considerable complexity yet perfect orderliness. Though Perret was still without a governmental diploma, the atelier [8] he ran here was associated with the École des Beaux-Arts. It almost seemed now as if he wished to demonstrate how much truer a representative he was of real French tradition than those who were its official, though unworthy, custodians. Thus the older he grew the farther his work drew away from that of the more revolutionary modern architects of the second generation. By 1930 it had definitely begun to date; yet it was only in the last twenty-five years of his life that there came to him the greatest opportunities of realizing his ambitions for French twentieth-century architecture.

In comparison with Perret's own pioneering of 1902–22 his late work seems to lack vitality. For all the thought that went into its finish, for all the virtuosity of certain features – such as the self-supporting curve of the broad stair that spirals down into his atelier in the Rue Raynouard – his very ambition to create a new French tradition gave his later buildings something of the banality of those designed by the more conventionally 'traditional' architects of his generation. This applies in particular to his principal work of the thirties in Paris, the still unfinished Musée des Travaux-Publics in the Avenue du Président-Wilson which he began in 1937. Here the ingeniously pseudo-Classical – yet also truly structural – apparatus of external engaged columns and the intricate plan spreading out from a circular auditorium at the apex of the site are quite in the Beaux-Arts manner. But the grandeur of scale in the interiors and the exciting upward sweep of the boldly curving stairs lend value, and even novelty, to a scheme that is in many ways extremely conservative.

After the Second World War Perret was asked to provide plans for the rebuilding of several bombed cities: Le Havre in 1945; Amiens in 1947; and the Vieux-Port district of Marseilles in 1951. For Amiens he designed a skyscraper, now physically complete but still unoccupied, that derives more from his decorative Tour d'Orientation at Grenoble than from the skyscrapers of the New World. This is one of his few complete failures, if for no other reason than the competition its tall and awkward silhouette offers to the cathedral, whose towers had so long dominated the city's skyline. The executed Marseilles buildings are not of his design any more than are most of those at Amiens.

At Le Havre, however, his control of the rebuilding was more complete. The Place de l'Hôtel de Ville, or at least the three sides completed between 1948 and his death in 1954, must be considered to outweigh by a great deal the failure of his Amiens skyscraper (Plate 140A). Ranges of four-storey buildings, all carried out in the reticulated vocabulary of his Government buildings of the early thirties in Paris, surround a large sunken plaza; a Hôtel de Ville in the rather Beaux-Arts manner of his Musée des Travaux-

Publics is being built on the fourth side. Shops open towards the square under a continuous colonnade. Behind, rising out of small courts, are taller towers occupied by flats; these lend great three-dimensional interest to the formal and absolutely symmetrical layout of this section of the rebuilt quarter. Since his death similar ranges of buildings have been carried out along the quais to the south. Their effect from the sea is most impressive and far superior to his big church, which has now been brought to completion also.

Impressive as is the work at Le Havre in the international roster of post-war urban rebuilding, it seems curiously out of date today, a mere realization in the 1940s and 1950s, one might almost say, of the aspirations of the early decades of the century. Since that period had few such opportunities as was Perret's here to realize urbanism on this scale, however, what he accomplished at Le Havre is a welcome addition to the city-building achievements of this century, so far rather limited.

Until the second generation appeared on the scene in the twenties France produced little modern architecture of much interest besides Perret's work. The department stores of the early years of the century, still strongly under the influence of the Art Nouveau, have already been mentioned (see Chapter 17). After Perret the most important architect was Tony Garnier (1867–1948), and he is of more significance for a vast project that he prepared in his youth than for the executed work of his maturity. In the later decades of the eighteenth century, when the Romantic Classical revolution in architecture was getting under way, projects were often of more interest than executed buildings for their premonitions of what was to come, and this was particularly true in France. It was true again in the early decades of the twentieth century, down at least to Le Corbusier's project for the Palace of the League of Nations of 1927.

Ledoux's 'Ville Idéale' summarized his own aspirations and also provided a wealth of models from which later generations of Romantic Classical architects could draw inspiration. So, at the opening of the twentieth century, Garnier's very complete scheme for a 'Cité Industrielle' [9] contained a wealth of ideas on which architects drew well into the 1920s. Like that of the 'Ville Idéale', the interest of the 'Cité Industrielle' is threefold: sociological, urbanistic, and architectural. Henceforth the industrial city would be more and more accepted as normal and not exceptional. Its needs both general and specific – so notably recognized by Garnier, all the way from the provision of adequate workers' housing to various sorts of industrial plants – would become more and more important pre-occupations of most modern architects. In coping with the manifold needs of an industrial community generally Garnier faced in detail, moreover, many very different individual architectural problems.

Garnier's solutions in the main were very simple and direct, but they often had a merely negative character, as of buildings of academic design scraped of all surface paraphernalia, rather than displaying any fresh and creative approach. But an important part of the main architectural development for some twenty years was to be such a purging of inherited excess. Garnier reduced architecture to basic, if not particularly unfamiliar, terms; on his foundations the next generation began, in the twenties, to build something much more positive; thus his influence was parallel to that of Loos (see Chapters 20

and 21). His contribution to the twentieth century's repertory of forms was less than Ledoux's had been to that of the nineteenth a hundred years earlier; notably inferior in quality to Ledoux's was his own actual production, moreover.

Garnier's appointment as Architect of the City of Lyons in 1905, a position which he retained until 1919, might seem to have provided the perfect opportunity to realize his dreams as, but for the Revolution, should Ledoux's appointment by Louis XV to build the Royal Saltworks at Arc-Senans. But neither the Municipal Slaughterhouse of Lyons at La Mouche, executed in 1909–13, the Herriot Hospital at Grange-Blanche, designed in 1911 and begun in 1915, nor the Olympic Stadium of 1913–16 at Lyons realize much more than the obvious practical implications of the detailed projects for various buildings in his 'Cité Industrielle'.[10] The slaughterhouse is bold structurally but clumsily industrial in its handling, with none of the refinement of Perret's factories; the more highly finished stadium has irrelevant Classical touches in the detailing, simple though it is, of the concrete elements.

Garnier's work after the First World War began with the hospital, which was completed only in 1930, and included a large low-cost housing project in the États-Unis quarter of Lyons designed as early as 1920 but executed only in 1928–30. Both are quite overshadowed by the comparable work of the next generation in these years – that in other countries at least, if not that in France. The Moncey Telephone Office at Lyons of 1927, the Textile School at La Croix-Rousse of 1930, and the Hôtel de Ville of the Paris suburb of Boulogne-Billancourt of 1931–4, on which another architect, J.-H.-E. Debat-Ponsan (b. 1882), a pupil of Victor Laloux, collaborated, differ very little from the scraped academicism of most French public architecture of this period. The houses Garnier built in 1909 at St-Rambert and in 1910 at St-Cyr in the Mont d'Or are among his best executed works, but for their period they are hardly very notable all the same.

Two blocks of flats built by Henri Sauvage (1873–1932) in 1925 in the Rue des Amiraux and in the Rue Vavin in Paris, faced with glazed white brick and stepped back in section to provide terraces for the upper floors, are well above the level of quality of Garnier's later work without approaching that of Perret's. That in the Rue des Amiraux, being for working-class occupancy, is more significant of the international aspirations of the period. Although less drastically novel than the low-cost housing of the twenties in Holland and Germany, this has survived very well because of its permanent grime-proof surfacing. It has been rather unjustly forgotten, largely because it lies off the main line of international development (see Chapter 21).

Most French production in the twenties remained completely subject to academic discipline although it was often tricked out with the sort of modish decoration that flourished particularly at the Paris Exposition des Arts Décoratifs of 1925. Yet at the same time Paris, as the world capital of modern art, was one of the three great foci of architectural advance. The linkage between advanced painting and the Art Nouveau in the nineties was discussed earlier (see Chapter 16). Perret employed Symbolist and Neo-Impressionist painters as collaborators, beginning with the Théâtre des Champs Élysées before the First World War. But there is no real parallel between his architecture and that of Garnier or Sauvage on the one hand and the art of the great twentieth-century

masters of the École de Paris on the other. Picasso, Gris, Braque, Matisse, and Derain had no effective influence on architecture. Characteristically Perret employed Bourdelle, not Maillol, when he needed sculpture. With the next generation the situation entirely changed; but the new architects of the twenties, not only in France but everywhere, for all their greater sophistication in the plastic arts and their closer association with advanced painters and sculptors, owed much to Perret and to Garnier if not to Sauvage.

To the most creative new architects who appeared around 1920 Garnier's project for the 'Cité Industrielle' offered both a challenge and an inspiration, but Perret was by far the more important influence. Somewhat later, towards 1930, that influence became almost ubiquitous in France, and its effect grew increasingly banal as the ferro-concrete Classicism of Perret's later work gradually replaced the official and inherited tradition of the École des Beaux-Arts, by that time nearly obsolete even in France.[11] As has so often happened in France before, a youthful rebel, after being accepted late in life by the academic authorities, was only too ready to offer a new discipline that was itself academic. Thus is cultural continuity maintained in France at the expense of variety and recurrent new growth. The situation is rather different in America, as we will soon see.

CHAPTER 19

FRANK LLOYD WRIGHT AND HIS CALIFORNIA CONTEMPORARIES

WRIGHT in America found himself, in his seventies, as generally accepted a master as did Perret in France, but his influence has never been at all academic in the way of Perret's after 1930. There could hardly be a greater contrast between the careers of two contemporaries in the same field. Both have been productive over a length of time that is more than a third of the whole period covered by this book, but this is about all that they do have in common. Perret's career progressed gradually over several decades to general and even official acceptance. Wright's career, on the other hand, has had very notable ups and downs, and he has yet to receive a Government commission.

After the years of preparation discussed earlier (see Chapter 15) there followed some ten years of great success. But this success was largely restricted to a particular region, the Middle West, and to a particular field, the building of good-sized suburban houses. Following that, in a decade interrupted by the First World War, Wright's influence rapidly increased, not at home but abroad, although he had considerably fewer, if much larger, commissions. Then, paradoxically, in the twenties, while the United States swung into the biggest building boom in history, there began a decade in which Wright's production all but ceased. Many assumed that his career had closed and that his work had passed into history as had Voysey's and Mackintosh's by that time. This, of course, was not at all true. In the mid thirties Wright's activity revived, and his production has continued at a rising rate ever since. Moreover, there has been little sign of any decline into personal academicism such as marked the late work of Perret in the same decades.

Where Perret had, in effect, only a double architectural career, being largely occupied on the one hand with industrial commissions close to the dividing line between architecture and engineering, and on the other hand with public buildings, Wright's career has been increasingly multifarious. Beginning as a domestic architect, he has never ceased to build houses; but by the 1950s there are few fields, including that of urbanism, which he has not entered, if only to present challenging projects and announce controversial theses. Disciple of a great skyscraper architect, author of a succession of skyscraper projects, Wright had to wait a full half century after Sullivan completed his last skyscraper in Chicago before he built his first, the Price Tower in Bartlesville, Oklahoma, in 1953–5. Some of his planning projects may yet come to execution, and his work at Florida Southern College is already of urbanistic scope.

Perret consciously summarized and continued earlier French tradition; Wright has wished to initiate a new tradition, one which he prefers to call 'Usonian' rather than American. Perret's disciples, emulators, and imitators in his later years were able to take control of French architecture to a quite considerable extent. Wright's disciples, despite the fifty years during which he maintained offices that were also training ateliers in Oak

Park, in Chicago, in Tokyo, in Wisconsin, and in Arizona, have only rarely made any significant mark of their own; nor has his influence had much more specific effect on the character of modern architecture in America than it has had generically on that of the world outside. Where Perret's influence, particularly outside France, has been largely restricted to architects working with ferro-concrete, the material that he was the first to master architecturally – and even in concrete construction this influence has inhibited as often as it has liberated – Wright's influence has been protean on the international scene. From the day when the German publisher Wasmuth first made Wright's work available to Europeans at the opening of the second decade of the century this has been true, down to the time, a decade ago, when the Italian architect, critic, and historian Bruno Zevi (b. 1918) tried to invert chronology so that Wright's 'architettura organica' [1] might seem to succeed rather than to precede the 'funzionalismo' or 'International Style' of the second generation of modern architects.

Before turning to a more detailed consideration of Wright's work after 1900 one further comparison with the *œuvre* of Perret may be made. Although Wright has never confined himself to one material or to one method of construction – indeed, his versatility in this respect has continued to increase right down to the present – he was from the first especially interested in the possibilities of concrete. He published in *The Brickbuilder* for August 1901 a project for a small village bank, still very Sullivanian in its rich detailing, that was intended to be executed entirely in concrete. This was only two years after Perret had first used the material with little or no attempt to develop its architectural possibilities and a year before his block of flats in the Rue Franklin was designed. His E.-Z. Polish Factory of 1905 at 3005–17 West Carroll Avenue in Chicago has already been mentioned. The Unity Church in Oak Park of 1906 (Plate 143B), entirely of concrete surfaced with a special pebble aggregate and decorated with integral ornament, precedes by many years Perret's church at Le Raincy (Plate 141). Perret's ultimate development of various refined finishes for exposed concrete came still later. Admittedly, however, the Oak Park church is a much smaller and less striking edifice than Perret's; and the work of Kahn and other industrial architects soon overshadowed Wright's modest factory. Moreover, it was only with the twenties that Wright, like the Europeans, really gave major attention to building in concrete.

Wright's creative powers in the first decade of this century were largely concentrated on his 'Prairie Houses'. Their essentials were already present in the two Kankakee houses of 1900 (Plate 142A) and the first house designed for the *Ladies Home Journal* (see Chapter 15). But these essentials received more masterly – one might well say more classic – expression two years later. The large W. W. Willitts house at 715 South Sheridan Road in Highland Park, Ill., of 1902 is of wooden-stud construction, but covered like the Kankakee houses with stucco (Plate 142B). The C. S. Ross house off the South Shore Road on Lake Delavan in Wisconsin, also of 1902, has the rough board-and-batten sheathing of the River Forest Golf Club (Plates 143A and 128B). Both offer versions of the cruciform plan (Figure 38) with the interior space 'flowing' round a central chimney core and also extended outward on to covered verandas and open terraces quite as in Price's Tuxedo Park houses of fifteen years earlier (Figure 28).

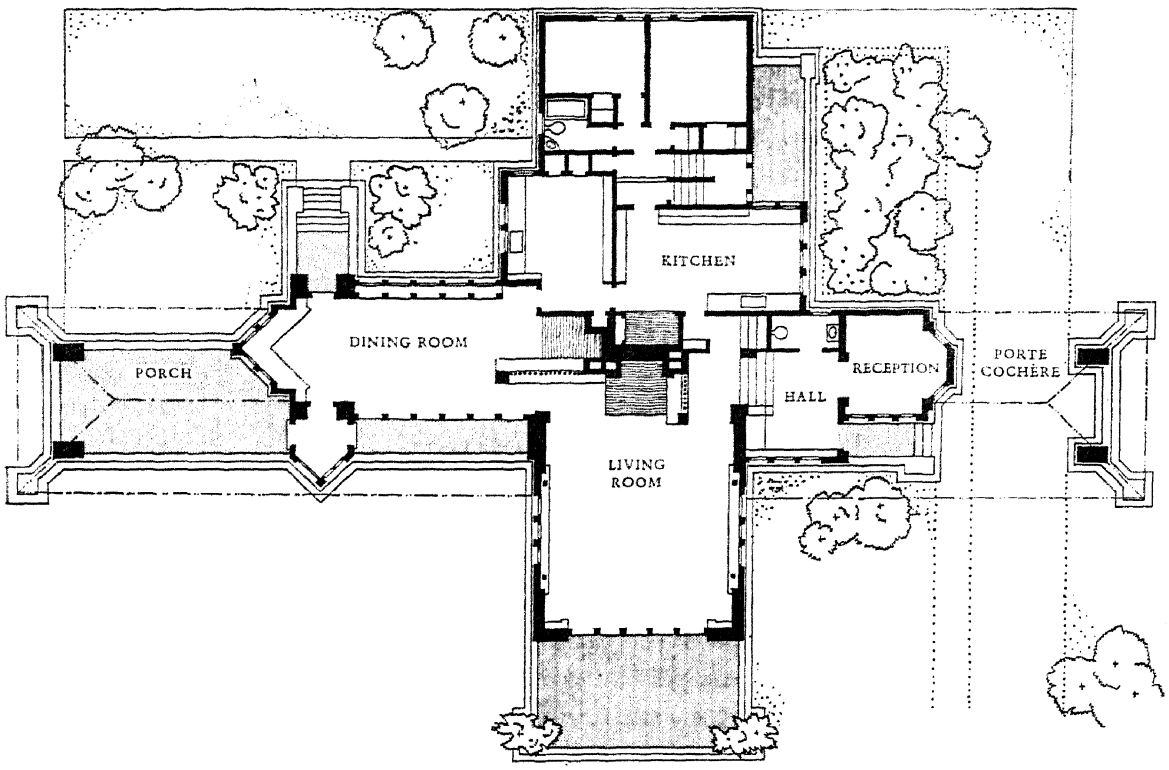


Figure 38. Frank Lloyd Wright: Highland Park, Ill., W. W. Willitts house, 1902, plan

Another major work of 1902 is the Arthur Heurtley house at 318 Forest Avenue in Oak Park, Ill. There the principal living areas, which are on the upper floor as in the Husser house of 1899, form an articulated L within the basic square that is defined by the overhanging roof. The brick walls of the lower storey have broad projecting horizontal bands and the wide, low entrance arch remains quite Richardsonian. The upper storey consists largely of continuous ranges of wooden-mullioned casement windows.

No notable progression is observable in the series of suburban houses built during the remainder of this decade before Wright went to Europe in 1909; but he produced many other brilliant illustrations of both the cruciform and the square plan as well as a more elongated sort extending along a single axis. Of the many fine examples of the Willitts or Ross type around Chicago, the small house for Isabel Roberts at 603 Edgewood Place in River Forest of 1908 is one of the best; there the living room in the front wing is carried up two storeys, as was proposed for one version of the *Ladies Home Journal* house. The larger F. J. Baker house at 507 Lake Avenue in Wilmette of 1909 also has a two-storeyed living room; but here the tall cross element of the plan which this feature provides was moved to one end of the house so that the plan is of a T or L shape rather than cruciform.

The E. H. Cheney house at 520 North East Avenue in Oak Park of 1904 is square like the Heurtley house near by. It is raised off the ground on a sort of extended square stylobate so that the living area, which runs all across the front as at the Hickox house, can open freely through french doors on to the walled terrace in front. In the T. P. Hardy

house at 1319 South Main Street in Racine, Wis., of 1905 a declivitous lakeside site encouraged a vertical rather than a horizontal organization of the interior with a two-storey living room as the spatial core.

A very different feeling pervades the small, squarish house at 6 Elizabeth Court in Oak Park that Wright built for Mrs Thomas Gale in 1909. Here flat slabs – which had been proposed as early as 1902 in a project (probably for execution in concrete) for the Yahara Boat Club in Madison, Wis. – replace the low-pitched hip or gable roofs of the characteristic Prairie Houses. Moreover, parapeted balconies and other simple rectangular features elaborate plastically the composition in a fashion that suggests the abstract sculpture of a decade later in Europe (see Chapter 21).

The W. A. Glasner house of 1905 at 850 Sheridan Road in Glencoe, Ill., on the contrary was extended longitudinally and the living area for the first time not at all articulated but completely unified (Figure 39). Something of the same longitudinal extension marks the much larger F. C. Robie house at 5757 Woodlawn Avenue in Chicago of 1909. But there the living room and dining room are separated by the chimney core and raised above the ground level. Built of fine Roman brick, this is the most monumental of these early houses. The long horizontal lines of the balcony below and the roof above dominate the composition; yet a cross element comes forward in the upper storeys to provide, less symmetrically than in his houses of cruciform plan, something of the abstract plasticity of the Gale house.

Another large house of the end of the decade, the Avery Coonley house at 300 Scottswood Road in Riverside, Ill., of 1908, offers a quite different and much more extended sort of plan. A square block with the living room raised above a terrace and a reflecting pool is the main element of the design, but from this block two long wings project. That to the left includes a large dining room and also very extensive service facilities at the rear; in the one to the right are the master's suite and other bedrooms. Thus the house is, in a later phrase of Wright's, 'zoned' according to function. The upper walls of this house are covered with a geometrical pattern produced by setting coloured tiles

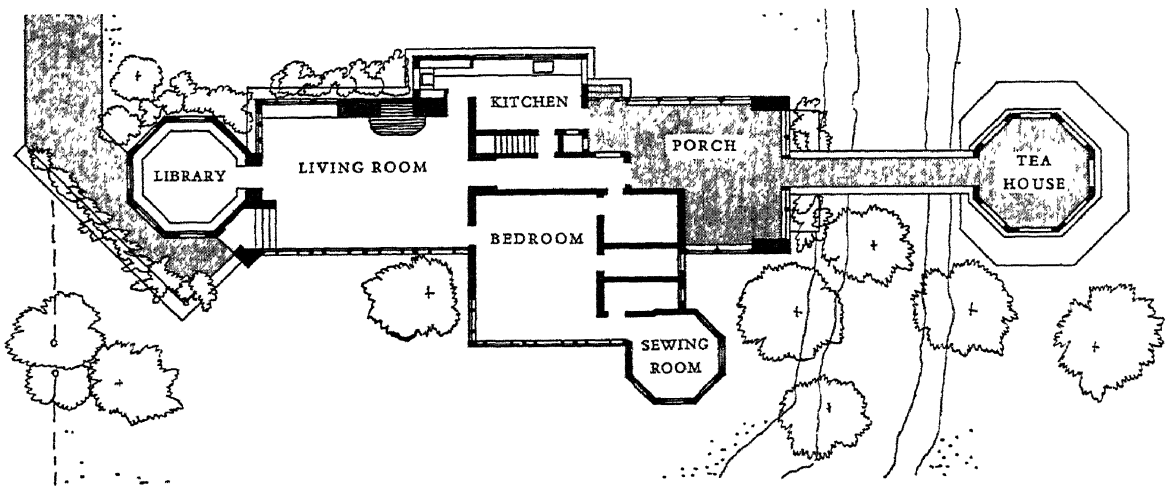


Figure 39. Frank Lloyd Wright: Glencoe, Ill., W. A. Glasner house, 1905, plan

into the stucco. Wright has never done quite the same again, but it led the way to his use of patterned concrete blocks a few years later.

Two of Wright's non-domestic works of this period are of considerable importance. Unity Church in Oak Park has already been mentioned; the other was the Larkin Administration Building in Buffalo, N.Y., of 1904. Massive and even sculptural externally, particularly at the ends, this had a tall glass-roofed court running down the centre, around which the upper ranges of offices extended on galleries carried by somewhat Sullivanian piers. All the fittings of the offices, including the steel furniture – probably the first to be designed by an architect – were Wright's. Thus he set here a wholly new standard of elegance, consistency, and coherence in semi-industrial building.

Within the massive slab-roofed block of the Unity Temple (Plate 143B), which is echoed beyond a low entrance link by the smaller block of the Sunday School, Wright achieved even more notably than inside the Larkin Building a new sort of monumental space-composition such as even his biggest houses hardly provided room for. The square auditorium with incut corners has double galleries on three sides and a pulpit platform on the fourth, behind which rises the organ. The multiple spatial elements seem to cross one another at different levels in a sort of three-dimensional plaid. Moreover, this theme is echoed in all the minor features, such as the wood stripping of the sand-finished plaster walls and the prominent lighting fixtures. Of this spatial development there had been some premonition in the auditorium block at one end of the Hillside House School that he built for his aunts outside Spring Green, Wis., in 1902; but there the masonry of the exterior walls and piers was still rather Richardsonian and the internal gallery consisted of a square set lozenge-wise.

Wright's work down to 1910 was made available to Europeans by two publications of Wasmuth, the Berlin publisher; and the end of the first decade of the century does, coincidentally, mark a real turning point in his career. He would not be so prolific again before the forties; and henceforth, although he has never ceased to build houses, these would no longer constitute the bulk of his production.

The production of the next decade, after his return from Europe in 1911, opens with two houses, however. Taliesin, which he built outside Spring Green for his mother in 1911, was soon much enlarged when he moved there himself and has ever since been his principal residence. As a result of the growing needs of his family and of his school – not to speak of two major fires in 1914 and 1925 – the Taliesin of today is very different, above all in its endless ramification, from what he planned in 1911; but the vocabulary of materials and design has remained more or less constant through all the years. Where the Prairie Houses echoed in their horizontal lines the flat Illinois terrain on which most of them were set, Taliesin is wrapped around a hill-top just below the crest. The use of various levels in the interior and a landscape-like elaboration of the low-pitched roofs represent his response to this more interesting site; since then the 'Prairie' master has avoided flat sites for houses whenever he could!

Taliesin, combining a house, drawing-office, living accommodation for apprentices, and even farm buildings, had from almost the first a complex plan not readily definable as square, cruciform, or unilinear. But in a project of the same year 1911 in which Talie-

sin was originally built, that for the S. M. Booth house at Glencoe, Ill. – never executed, unfortunately, according to these plans – a new sort of organization appeared, related to the elaborated cube of the Gale house and also to the 'zoned' scheme of the Coonley house. A two-storey living-room was to provide both the spatial and the plastic core; from this wings serving different purposes would shoot out swastika-like.

The relative homogeneity of Wright's production in the first decade of the century, following after the gradual convergence of his early work during the nineties, is explained by the nearly identical problems and sites that he faced in designing the houses mentioned so far. This homogeneity now gave way to an increasing variety that makes it difficult to summarize the work of these years. The Coonley Playhouse, built on the Coonley estate at Riverside in 1912, bears little resemblance to the original house of four years earlier. The plan is cruciform and symmetrical; but what is new here is the way the slab roofs, set at two different levels and pierced through their wide projections in order to let light reach the windows below, were used to achieve an even more boldly sculptural quality than in the project of 1902 for the Yahara Boat Club or the Gale house of 1909. Wright's mastery of abstract decoration was wholly mature by this time. From the first he had used leaded glass in simple geometrical patterns in his windows,[2] but the windows in this playhouse are the finest of all. Moreover, these festive compositions of circles of coloured glass arranged asymmetrically resemble quite closely the abstract paintings that such artists as Delaunay, Kandinsky, and the Constructivists would shortly be producing in Europe.

Northome, the F. W. Little house at Wayzata, Minn., of 1913, is also quite different from all the earlier houses, yet not at all similar to the Coonley Playhouse. Raised on a ridge above the southern shore of Lake Minnetonka, this house consists of a series of pavilions – some open, some closed – strung along a single axis parallel to the water's edge. That containing the living room, which is of almost monumental size and scale, dominates the whole. Wright seemed able now to invent a new mode almost with every individual commission, each one with potentialities as great as those of the Prairie Houses he had so thoroughly exploited in the decade before 1910.

The major work of the immediate pre-War years, the Midway Gardens of 1913–14 on the Midway south of Chicago, is rather hard to define precisely. Not quite a beer or *Heuriger* garden, nor yet a music-hall or cabaret in the ordinary European sense, the establishment consisted of a large outdoor dining and entertainment area with raised terraces on two sides, a stage and orchestra shed at the far end, and a closed restaurant block towards the street. Here Wright's ambitions as a decorative artist could have free play. Abstract compositions of coloured circles like those in the windows of the Coonley Playhouse appeared here as wall-high murals at the ends of the covered restaurant. Moreover, the sculptural implications of the general composition of the playhouse were carried farther in the openwork 'constructions' that he set on the tops of the towers. At the same time he introduced a great deal of figurative sculpture stylized in a rather Cubist way. Thus several different aspects of the abstract and near-abstract art which was just coming into independent existence in Europe were closely paralleled in the adjuncts to Wright's architecture here.

More architectonic patterns produced by simple geometrical means also ran riot at the Midway Gardens. Notable and significant was the use of extensive areas of patterned concrete blocks; these were somewhat like the patterned upper walls of the Coonley house of 1908 but all monochrome. The early demolition of the Midway Gardens makes it difficult to know whether this tremendous elaboration of the decorative aspects of Wright's architecture was symphonic or cacophonous in total effect. Whatever the degree of their success or their failure, however, they opened a sort of 'Mannerist' or 'Baroque' [3] period in his career that was destined to last for more than a decade.

During the First World War, in 1915, Wright was approached by emissaries of the Japanese Imperial Household to design and build the Imperial Hotel in Tokyo. Proceeding to Japan, Wright was largely concerned with this commission for the next seven years, finally bringing it to completion in 1922. This is the principal production of his 'Baroque' phase. It was also a notable engineering triumph, for his ingenious use of concrete slabs carried on a multitude of concrete piles brought it safely through the earthquake of 1923. Paul Mueller, the engineer of the old Adler & Sullivan office, was his collaborator here.

Abstract ornament proliferated on the hotel; some of it, carved in greenish lava, elaborates the garden courts of the vast H-shaped plan; still more is painted in gold and colour on the ceilings of the principal interiors. Moreover, the massive proportions of the masonry walls produce an effect of castle-like solidity wholly inexpressive of the method of their support and very far removed from the light and floating character of the Prairie Houses. On the whole this hotel represents, far more than the Midway Gardens, a cul-de-sac in Wright's development.

Overlapping the period of construction of the Imperial Hotel came a series of houses in southern California in which the 'Baroque' element was gradually restrained. The earliest of these, Hollyhock House in Los Angeles and two smaller houses near by, were built for Aline Barnsdall in 1920 on a large estate bounded by Sunset and Hollywood Boulevards, Edgemont Street, and Vermont Avenue. These are of poured concrete very massively handled and carry considerable abstract sculptural ornamentation. For a slightly later series of four houses around Los Angeles, beginning with the house of 1923 for Mrs G. M. Millard at 645 Prospect Crescent in Pasadena, Wright developed a type of concrete-block construction with reinforcement in the joints that was of considerable technical interest and also offered special decorative possibilities. The idea of using concrete blocks cast with relief patterns of geometrical character goes back to the Midway Gardens, however, and walls covered with repeating ornamental units had first appeared at the Coonley house.

In the Millard house, particularly, the scale of the moulded blocks and the ingenious inclusion of pierced units – very similar to the pre-cast elements that Perret was using for the screen walls of his Le Raincy church at just this time – produced a masterpiece (Plate 144). This house, however, is not solely of interest for its construction and its decoration. In contrast to the horizontal composition of almost all his earlier houses except that in Racine for the Hardys, this is a tall vertical block, entered at the middle level, with the dining room and kitchen below and the two-storey living room opening out

to a balcony at the rear (Figure 40). The main bedroom is reached from a gallery overhanging the rear of the living-room. Both organizationally and visually this represents a surprising change, and the result closely resembled what a leading architect of the second generation had just then been proposing in Europe (see Chapter 22). There are, for instance, no hovering eaves here; instead a parapet continues the wall plane upward and confines a roof terrace. This is as close as Wright ever came to building a 'box-on-stilts', his term of abuse for the advanced European houses of the twenties. It was as if, after the expansiveness of his work from the Midway Gardens to Hollyhock House, Wright wished to prove here his capacity to produce a house modest in scale and compact in section as well as in plan.

In the next decade, from 1924 to 1934, Wright's actual production declined almost to zero although he was working on a series of important projects, some of which later provided the basis for executed buildings. Taliesin was rebuilt after a fire in 1925, however – it had already been rebuilt once before after an earlier fire in 1914 – and a large house of concrete blocks, with almost no use of pattern except for occasional pierced grilles, was erected for his cousin Richard Lloyd Jones in 1929 at 3700 Birmingham Road in Tulsa, Okla. That is about all.

The small M. C. Willey house of 1934 at 255 Bedford Street, S.E., in Minneapolis marked the beginning of what has proved to be almost a second career for Wright. Low and L-shaped, with practically no ornament whatsoever, this modest brick house introduced a major change in domestic planning. Not only are the living room and the dining room completely unified, as was first done at the Glasner house in 1905, but the kitchen – now re-christened 'work-space' – opens into the main living area behind a range of glazed shelves (Figure 41). More than twenty years later the full implications of this development are still not quite digested in America or even fully apprehended abroad.

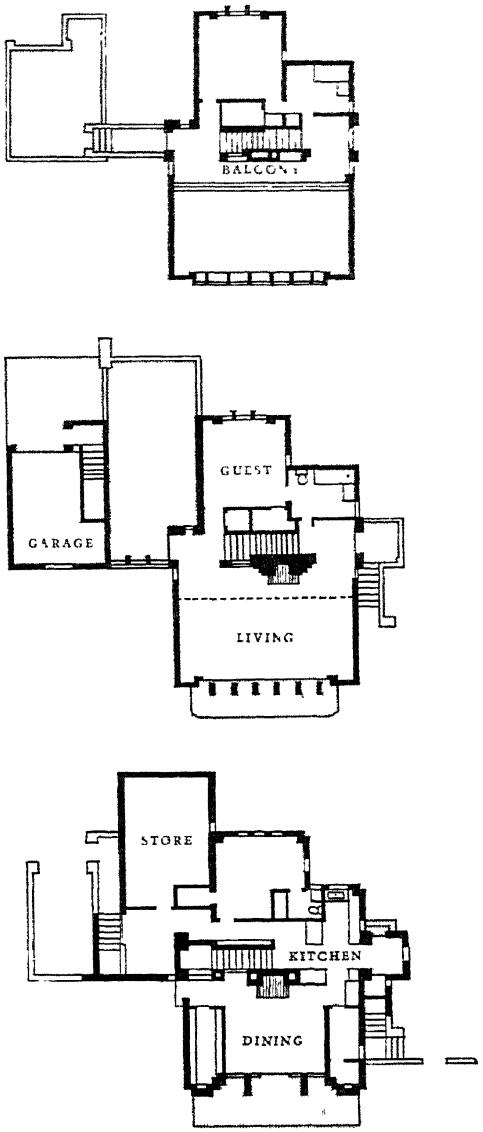


Figure 40. Frank Lloyd Wright: Pasadena, Cal., Mrs G. M. Millard house, 1923, plans

It was not the Willey house, however, modest in size and very quiet in expression for all its revolutionary plan, that signalized the renewal of Wright's activity. That he could take up his career again at the highest level of creativity became apparent to everyone

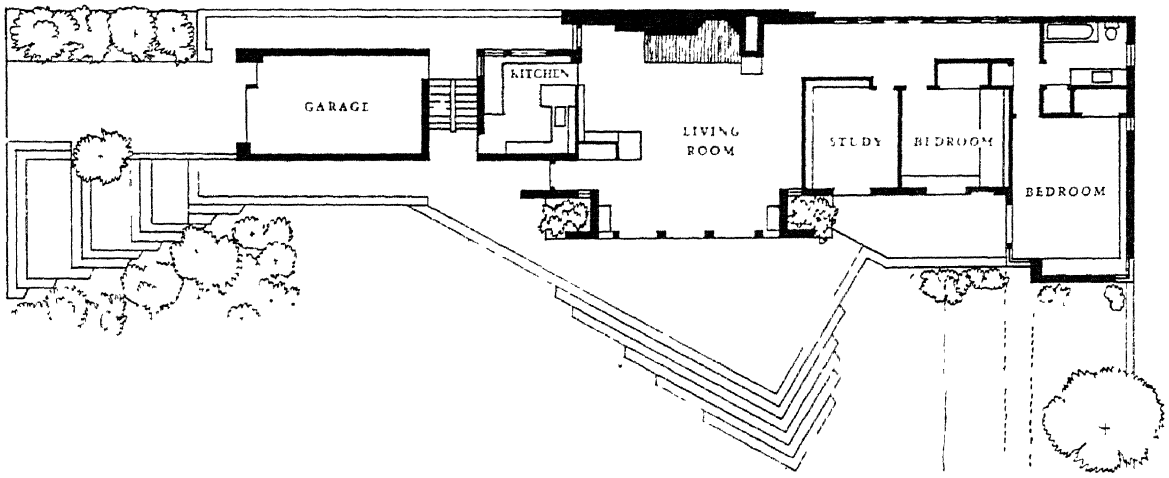


Figure 41. Frank Lloyd Wright: Minneapolis, M. C. Willey house, 1934, plan

with the construction of two much larger buildings both designed in 1936. Falling Water, a large house in the Pennsylvania woods, is cantilevered over a waterfall with a sense of drama even Wright had never hitherto approached. The Administration Building for the S. C. Johnson Wax Company at 1525 Howe Street in Racine, Wis., his first semi-industrial commission since the Larkin Building of 1904, was built in 1937–9. Both are as remarkable for the technical boldness of their use of concrete – totally different in the two cases – as for their design.

Falling Water has a rear section built of rough stone which rises like a tower from the native rock on the banks of Bear Run. From this solid vertical core are cantilevered out a series of concrete slabs bounded by plain parapets at their edges. This produces a very complex horizontal composition related to, but infinitely elaborated from, that of the Gale house of 1909 (Plate 145A). The completely unified living space is closed in by stone walls on the inner or dining side. It also extends out over the waterfall; the all-glass walls on that side, with their thin metal mullions, hardly seem to separate the interior space at all from that of the open terraces outside. A similar relationship exists between the bedrooms and their terraces on the upper floors.

Never before had Wright exploited the structural possibilities of concrete so boldly. In this amazingly plastic composition – if 'plastic' be the word for anything so light and suspended in appearance – it seems as if he had determined to outbid the European architects of the second modern generation at their own games (see Chapter 22). His early work has, in the clarity and axial character of the organization and the serenity of its expression, a classic if hardly a Classical quality; his work of 1914–24 shows a Baroque exuberance in the proliferation of the ornament. Now that he was approaching seventy his Romantic or anti-Classical tendencies – call them what you will – reached an intensity of purely architectonic expression comparable to the musical intensity of the late quartets of Beethoven that Wright so much admires. Falling Water, which might easily have been the swan song of Wright's career, soon to be halted again by a second World War, proved in fact but the opening *allegro* in a new period of innovation and experiment.

The Johnson Building is very different from Falling Water. In it the curve rather than

the cantilever provides the principal theme, and enclosure rather than interpenetration of exterior and interior space controls both the planning and the design (Plate 146A). The main office area is tall and unified, but it is filled with a forest of inverse-tapered concrete piers rising from tiny bronze shoes to carry circular slabs of concrete whose edges all but touch. The spaces between these lilypad-like disks were filled with tubes of Pyrex glass, and bands of similar tubes are carried around the building below the balcony and at the top of the plain red brick walls to provide additional natural light. In the more specialized adjuncts to the general office area curved and diagonal plan-elements lend a machine-like elegance to the shape of the building as a whole. Additional bands of glass tubing interrupt the smooth and continuous masonry surfaces at intervals, thus clearly indicating that these portions are of several storeys.

Falling Water and the Johnson Building were large and expensive structures; so also was Wingspread, the H. F. Johnson house that Wright built in Racine at the same time. This is zoned in the manner of the Booth project of 1911 around a tall central core. But in 1937 Wright also erected the first of what he called his 'Usonian' houses, the Herbert Jacobs house at Westmorland, near Madison, Wis. This modest L-shaped dwelling, with wooden 'sandwich' walls and a flat wooden slab roof, carried farther than the Willey house the integration of the 'work-space' or kitchen with the main living area. Here this rises in a masonry tower and is lighted by a clerestory, yet it is closely related to the space of the interior as a whole. A very considerable range of Wright's later houses are variants of the Usonian model. Some were built before the War, even more in the last decade; some are of modest dimensions like the Jacobs house, others much larger. They exist in all parts of the United States, including the East, where he had hardly worked at all before this time.

The earlier Usonian houses were designed on a square module. This is true, for example, of the version that he prepared for *Life* magazine in 1938,[4] which thereby received the same sort of national circulation that the *Ladies Home Journal* gave to three of his projects more than a generation earlier.[5] But Wright was now interested also in developing the hexagon and the triangle as basic units. Beginning with the Hanna house of 1937 at 737 Coronado Street in Palo Alto, Cal., he has continued in many others to explore the possibilities of planning based on 60–30-degree angles.

In the most extraordinary house that he built in these pre-war years, his own winter residence, Taliesin West, begun in 1938 in the desert outside Phoenix, Ariz., 45-degree diagonals are used in the planning and almost all the structural elements are battered or canted. However, it is the materials which give this edifice – like Taliesin itself at once a house, a working place, and a school – its unique qualities. The substructure is of 'desert concrete', that is great rough blocks of tawny local stone placed in forms and loosely stuck together, so to say, with concrete; the superstructure is of dark-stained timber frames mostly filled only with canvas to allow a maximum flow of air. As at Taliesin in Wisconsin, Wright has continued to enlarge Taliesin West ever since, not always to its advantage. Another example of desert-concrete construction, the Rose Pauson house of 1940 in Phoenix, was destroyed later by fire. It was, in its very sculptural way, a masterpiece of this period unlike anything else he has ever built.

It is characteristic of Wright's activity in his 'second' career that the versatility of his invention knows no bounds. Many earlier ideas that had existed only in projects could come to fruition now that his services were in such demand. At the same time it is hard to believe that in the plain white stucco walls, extensive window bands, and thin roof slab of the E. J. Kaufmann guest house, built just above Falling Water in 1939, or in the G. D. Sturges house of the same year at 449 Skyway Road in Brentwood Heights near Los Angeles, cantilevered out from a hill-slope, Wright was not consciously rivalling the effects of the European architects of the second generation whom he professed to scorn – rivalling them, but also making very much his own such of their effects as he cared to emulate.

Wright did not drop the novel methods of construction that he had developed earlier as he tried out new ones. In his most extensive late commission, the layout of a new campus for Florida Southern College at Lakeland in Florida, begun in 1938, the plan is highly formal at the same time that it is markedly asymmetrical. It thus elaborates upon the angular themes of his project of 1927 for a desert resort at Chandler, Arizona – incidentally the point at which his interest in 60–30-degree angles began. The buildings at Florida Southern, starting with the Ann Pfeiffer Chapel of 1940 to which several more have been added since, are mostly of concrete-block construction, but with much less use of patterned elements than in the executed work and projects of the twenties.

The Second World War interrupted Wright's career less than the First. Various projects initiated in the war years came to fruition soon after the war was over and gave evidence of the continuing vitality of his powers of invention. The second house for Herbert Jacobs at Middleton in the country west of Madison, Wis., was very different from the Usonian one of 1937. Ever since an unexecuted house project of 1938 Wright had been fascinated by the possibilities of using the circle in planning. While he had tried out the form in the Florida Southern Library before the War, the Jacobs house of 1948 was the first of a series of houses he has since built with curved plans. Its two-storey living area bends around a circular sunken garden court with the bedrooms opening off a balcony above (Figure 42). On the other side the house is half buried in the hill-top, above which rise its walls of coursed rubble. A tower-like circular core near one end of the convex side provides a strong vertical accent.

Another house of the post-war years, also based on the circle, is quite different in character. The Sol Friedman house in Pleasantville, N.Y., is roofed with mushroom-like concrete slabs; the two intersecting closed circles of the actual dwelling are balanced at the end of a straight terrace parapet by the open circle of the carport (Plate 145B). This was completed in 1949 with battered walls of almost Richardsonian random ashlar masonry below a strip of metal-framed windows. A still later 'house of circles' for his son David J. Wright was built near Phoenix, Ariz., in 1952. This is of concrete blocks and raised off the ground, with the approach up a gently sloping helical ramp to the various curved rooms on the first storey. The circle and the helix appear also in an urban building of these years, the shop for V. C. Morris in Maiden Lane, San Francisco, completed in 1949. Here the street façade is a sheer plane of yellow brick broken only by the entrance, which is a Sullivanian – or Richardsonian – arch like that of the Heurtley house

of 1902. Inside, a helical ramp rises around the central circular area beneath a ceiling made of bubble-like elements executed in plastics.

A major work of these years, the extension of the Johnson Administration Building in Racine, Wis., also completed in 1949, makes much use of circles also (Plate 146A). North of the existing office building Wright surrounded a square court with open carports whose outer walls of solid brickwork shut out the surrounding city; inside these walls are ranged short concrete columns with lily-pad tops like those in the section that he

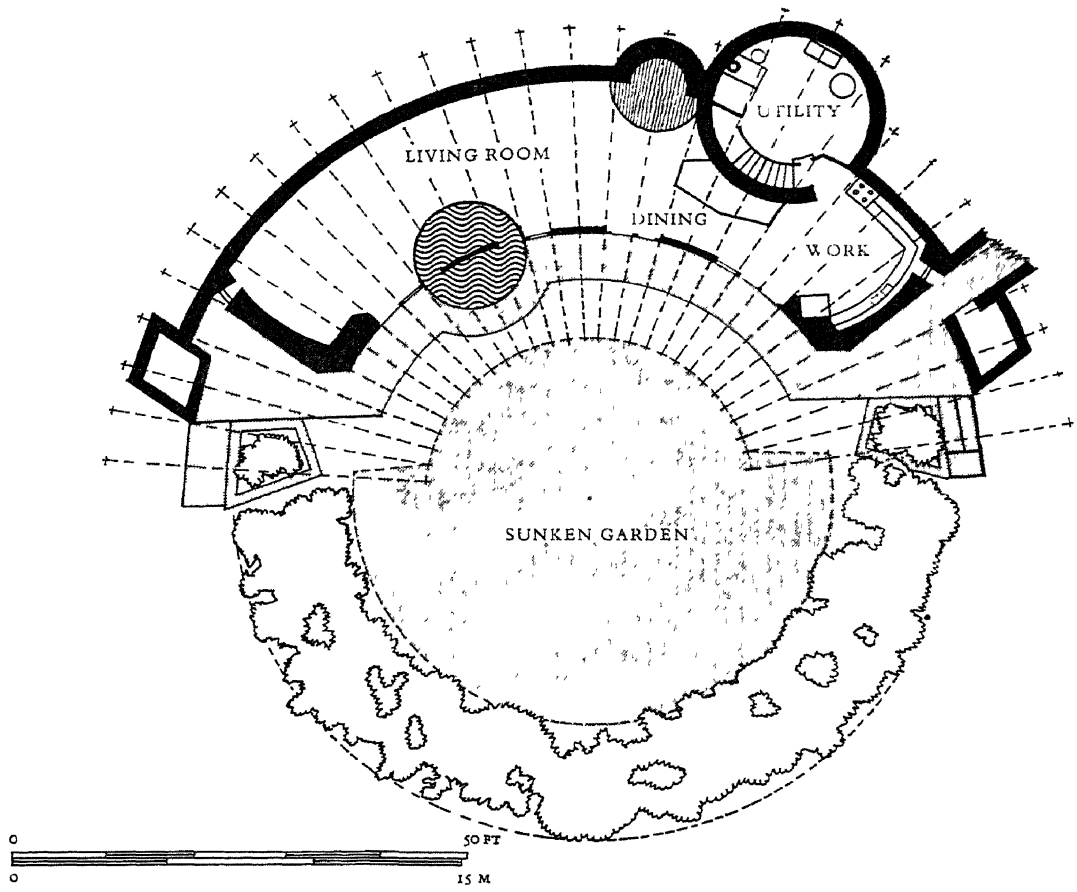


Figure 42. Frank Lloyd Wright: Middleton, Wis., Herbert Jacobs house, 1948, plan

built ten years earlier. In the centre of the 'piazza' thus defined rises a laboratory tower of tree-like structure. The upper floors of this, alternately square with rounded corners and circular, are all cantilevered out from a central cylindrical core which contains the lift and the vertical canalizations. Alternate bands of brickwork and Pyrex tubing, such as were used on the original building, enclose the tower except at ground level; there the space of the court continues under the cantilevered floors above as far as the solid central core.

This relatively modest tower prepared the way for Wright's skyscraper in Bartlesville, Okla., of 1953–5, which has been mentioned earlier. Actually, however, this Price Tower,[6] which is partly ocupied by offices and partly by flats, is the final realization of

a project originally prepared in 1929 for a block of flats for St Mark's Church in New York. This he had elaborated in the intervening years in projects for blocks of flats in Chicago and for a hotel in Washington.

While Wright was continuing to employ in his houses of the late forties and early fifties a variety of modes of design that go back to the thirties, and also developing at Florida Southern and in Bartlesville ideas dating from his inactive period in the late twenties, he continued to strike out in other directions too. The Neils house at 2801 Burnham Boulevard on Cedar Lake in Minneapolis, Minn., completed in 1951, is all of coloured marble rubble provided by the client; the Walker house at Carmel, Cal., completed in 1952, is a glazed polygonal pavilion overhanging the sea. Where the Prairie Houses of the first decade of Wright's mature career may all seem in retrospect to have come out of the same, or nearly identical, moulds, the houses designed in his seventies and eighties are notable for their great variety in a period when architectural design was tending generally towards standardization.

Nor was the domestic field anything like the sole area of his activity. In addition to the college buildings, the shop, the skyscraper, and the laboratory that have been mentioned, Wright built during the years 1947–52 a Unitarian church in Madison, Wis., of very original character. The products of his multifarious activity in these years include, moreover, many projects for all sorts of structures, some of which are already in construction – notably that for the Solomon R. Guggenheim Museum in New York. A decade of designing and re-designing preceded the initiation of this remarkable helical concrete building in 1956. Two other major projects, for an opera-house in Baghdad and for an Arizona state capitol in Phoenix, date from 1957 and preface a period of nonagenarian production.

In spite of so much activity, greater than that of his early maturity, in spite (or perhaps, in part, because) of its kaleidoscopic variety, Wright's actual influence is less significant than it was forty years ago; at least it is of a very different order. He still outpaces his juniors both of the next generation and the one after; but few if any are able to follow with any success along the intensely personal paths he opens.[7] Like Perret to the end of his life, Wright continues at ninety to offer an inspiration to all architects, but there is no school of imitators to vulgarize his manner as there is still a school of imitators of Perret in France.

In creative power, in productivity, and, over the forty years and more since 1910, in influence, Wright overshadows all the other American architects of his generation. Inspired by Wright as well as by Sullivan, there flourished for a while a sort of 'Second Chicago School' to which Purcell & Elmslie; George B. Maher (1864–1926); Schmidt, Garden & Martin,[8] and several other architects who were active in the Middle West before the First World War may be considered to belong. But this school flickered out in the twenties as most of its members succumbed to the dominant 'traditionalism' of the day or else ceased to find clients.[9] Four rather more vital and original architects appeared shortly after 1900 in California, and one of them is still alive: the brothers Greene (Charles S., 1868–1957, and Henry M., b. 1870), Irving Gill (1870–1936), and Bernard R. Maybeck (1862–1957).[10] But the productive careers of the Greenes, of Gill,

and, to a lesser extent, that of Maybeck came pretty much to a close, like those of the Chicagoans, around 1915 with the resounding success of the 'traditional' buildings designed by Bertram G. Goodhue (1869–1924) for the San Diego Exhibition of that year.[11] These were in the most ornate sort of Spanish Baroque, quite archaeologically handled; and the emulation of them, which at once became endemic in California, turned most local architects away from innovation for almost twenty years.

Maybeck, who had been a graduate of the École des Beaux-Arts in the eighties, contributed to the San Francisco Exhibition [12] of the same year the still extant Fine Arts Building in an equally 'traditional' but more Classical vein. Partly ruined today, his tawny stucco columns and entablatures have the air of a painting by Pannini or Hubert Robert. For all its charm, this was a surprising work to come from a man who had earlier shown himself, in the Christian Science Church of 1910 in Berkeley, Cal., almost as bold an innovator as Wright even though he employed for that a fantastically eclectic vocabulary of reminiscent forms (Plate 146B). Many Berkeley houses, moreover, ranging over several decades in date, also prove Maybeck an architect of great originality and surprising versatility.

In Berkeley also are several houses by John Galen Howard (1864–1931) as well as his building for the University of California's School of Architecture, of which he was for long the Dean. His building at the University (which has in addition a Faculty Club and one or two other things by Maybeck), the Gregory house of about 1904, and the architect's own house of 1912 are also notable examples of free design dating from the first decades of the century. Howard's informal work is more directly related than are Wright's houses to the Shingle Style of the preceding period, though not specifically to that of Richardson, for whom, however, Howard had actually worked in the mid eighties before he came to California. Most of his work at the University, however, is in an Italianate vein, and the campus is dominated by his tall, campanile-like clock tower.

The production of the Greene brothers in this period, entirely domestic and largely in Pasadena, offers a more coherent corpus than that of any modern American architect of their generation except Wright. Related, like the work of Howard, to the Shingle Style, which had been brought to Pasadena and Los Angeles by Eastern architects in the eighties and nineties, the Greenes' houses are most interesting for their successful assimilation of oriental influences. The best example is the Gamble house at 4 Westmorland Street in Pasadena of 1908–9 (Plate 147A). But the Pitcairn house of 1904 and the Blacker house of 1907, at 289 West State Street and at 645 Prospect Crescent respectively, as well as the later Thorsen house of 1918–20 in Berkeley, now a fraternity house, are also excellent.

Shingled walls, low-pitched and wide-spreading gables, together with extensive porte-cochères and verandas of stick-work rivalling in virtuosity those of the Stick Style, were combined by the Greenes in rather loosely organized compositions. Less formal and regular than Wright's Prairie Houses, theirs are executed throughout with a craftsmanship in wood rivalling that of the Japanese, whom they, like Wright, so much admired. The Greenes' plans are less open than Wright's, but they make more use of verandas and balconies than he. Superb woodwork and fine stained glass combine

with the specially designed furniture in the interiors to produce ensembles of a sturdy elegance hardly matched by any of Wright's. Those in the Thorsen house, whose client was an importer of exotic woods, are especially rich.

Moreover, a 'California Bungalow' mode [13] – at worst but a parody at small scale of the Greenes' expensive mansions, at best sharing many of their virtues of directness and simplicity if not of imaginative craftsmanship – became widely popular thanks to national magazines, pattern-books, and the activities of many builders. This was true not alone in the West but throughout the country in the very years after 1910 when 'traditionalism', usually in Neo-Colonial guise, closed in most completely on American domestic architecture.

The reputation of the Greenes today is less than that of the more articulate but less consistent Maybeck. But when modern architecture revived in California in the thirties the new men were fully aware of what the Greenes had accomplished. Thus their work provided, together with that of Maybeck and Howard, a background and a tradition for the local development of a largely autochthonous domestic architecture in the San Francisco Bay area. This is a truly living tradition [14] quite unlike the abortive revival of the architecture of the Spanish Missions, which it has now almost completely displaced. But the Mission influence was not altogether a negative one in early twentieth-century California, as the work of Irving Gill illustrates.

Gill was less prolific than the Greene brothers, and most of what he built is less striking. Like Voysey, he was in principle a reformer not a revolutionary, finding his inspiration consciously in the local structural tradition of the early Spanish Missions and *haciendas*. As a result some of his buildings, such as the First Church of Christ Scientist of 1904–7 in San Diego or in Los Angeles the Laughlan house of 1907 and the Banning house of 1911, at 666 West 28th Street and 503 South Commonwealth Avenue respectively, with their elliptically arched loggias and their grilles of ornamental ironwork, are almost as 'Spanish Colonial' as the work of the outright traditionalists around him.

However, since Gill worked almost always not with wood but with plain masonry walls covered with white stucco, his houses can also have a deceptive air of being European rather than American and of a period some years later than that in which they were actually built. In his best work, such as the Dodge house (Plate 147B) of 1915–16 at 950 North Kings Road in Los Angeles or the Scripps house at La Jolla of 1917, now the Art Centre, the asymmetrically organized blocks, crisply cut by large windows of various sizes carefully sashed and disposed, with roof terraces or flat roofs above, more than rival the contemporary houses of the Austrian architect Adolf Loos (Plate 155A) in the abstract distinction of their composition. They even approach rather closely the most advanced European houses of the next decade (see Chapters 21 and 22).

Gill's interiors are especially fine and also quite like Loos's. Very different from the rich orientalizing rooms designed by the Greenes, they are in fact more similar to real Japanese interiors in their severe elegance. The walls of fine smooth cabinet woods, with no mouldings at all, are warm in colour, and Voysey-like wooden grilles of plain square spindles give human scale. The whole effect, in its clarity of form and simplicity

of means, is certainly more premonitory of the next stage of modern architecture than any other American work of its period.

Gill continued to practise intermittently down into the thirties, but his best houses seem to have been done in the second decade of the century. He has not been as much studied, however, as Maybeck and the Greenes, and there may be other work of his than that which is generally known. He had little influence locally and still less nationally, yet his best houses extend very notably the range of achievement of the first generation of modern architects in America, even though his production declined so soon both in quantity and in quality. Wright alone was able to renew his career successfully after the reaction against modern architecture that dominated America from coast to coast during the twenty years from the First World War to the mid thirties finally came to an end.

CHAPTER 20

PETER BEHRENS AND OTHER GERMAN ARCHITECTS

THE pattern of architectural development in Germany in the early decades of this century was rather different from that in either France or the United States. No academy, native or foreign, no influences from the École des Beaux-Arts discouraged innovation; yet there was an early and general reaction against the whimsicality and the decorative excesses of the Art Nouveau at which most of the younger men had tried their hands around 1900. After the First World War, however, the example of Expressionism in painting and sculpture led many architects to excesses of another sort. Expressionism in architecture,[1] or something very close to it, is not restricted to Germany. The most extreme example of any consequence, and probably the earliest, is Dutch, the Scheepvaarthuis in Amsterdam of 1912–13 by van der Meij (see Chapter 21). In Germany around 1920 various architects who had earlier been predominantly 'traditional' in their approach were influenced by Expressionism, as well as others who were already programmatically modern; nor was that influence restricted to the modern architects of the first generation (see Chapter 22).

The boundary line between what, in retrospect, still seems definitely modern and what now seems very similar to the 'traditional' work of these decades in other countries is much less sharp than in America. And no German architect of their own generation has the continuously creative achievement of a Perret or a Wright to his credit. Nevertheless Peter Behrens stands out among his contemporaries because of the vigorous boldness of his industrial buildings. Moreover, the influence of his factories of around 1910 was crucial on the next generation, and several of the later leaders actually worked in his office at that relevant period. Yet all but Behrens's finest work can be matched in the production of other German architects; while his own vitality as an innovator was rather strictly limited to a few years and to what he did for one corporate client. That client was the A.E.G. (German General Electric Company), which had already employed Messel down to his death in 1909.

Messel and Ludwig Hoffmann (1851–1932) dominated the architectural scene in Berlin, where the latter was appointed City Architect in 1896 on the strength of his vast academic Imperial Law Courts of 1886–95 in Leipzig. In the early years of the century they both developed a formal mode that was more 'traditional' than modern. Despite Messel's and Hoffmann's usual preference for conventional sixteenth- or eighteenth-century models, Behrens was certainly not uninfluenced by their mode of design, even though his more positive sources of inspiration were of a less conservative order. Yet, in so far as one can sort out the different architectural camps in Germany in these years, Behrens must be considered well to the artistic 'left' of Messel and Hoffmann.

Germany was certainly very receptive to new ideas in decoration when Behrens's

architectural career began at the turn of the century – receptive rather than creative. There were other Germans who handled the Art Nouveau with considerable originality besides August Endell, notably Bernard Pankok (b. 1872) and Richard Riemerschmid (1868–1957); but two foreigners, neither of them very prolific builders, seem to have been the most influential figures on the German architectural scene at the opening of the new century. The Belgian Van de Velde had moved from Paris to Berlin in 1899; the Austrian Olbrich was called to Darmstadt by the Grand Duke in the same year. Olbrich stayed at Darmstadt until his early death in 1908; Van de Velde, however, left Berlin in 1902 when he was invited to Weimar to head the School of Arts and Crafts there which later became the Bauhaus. Van de Velde's finest Art Nouveau furniture dates from his Berlin years around 1900. As late as 1906,[2] the Central Hall which he designed in the Dresden Exhibition showed him still a competent if rather heavy-handed decorator in the Art Nouveau tradition.

Van de Velde's Folkwang Museum at Hagen of 1900–2, quite Art Nouveau in its detailing, his Esche house at Chemnitz of 1903, and his Leuring house at Scheveningen in Holland of the next year, both retaining the heavy mansards and the massive modelling of his own house of 1895–6 at Uccle, hardly require particular mention. However, for the school that he headed in Weimar he completed in 1905 a building quite devoid externally of Art Nouveau elements and notably straightforward in character. The plain white stucco walls below his usual heavy mansards were very frankly fenestrated with ranges of wide studio windows, perhaps in emulation of Mackintosh's Glasgow Art School. Indeed, the general effect is even simpler and more rectilinear than that of its possible Scottish prototype. The problem of his responsibility or lack of responsibility for the design of the Théâtre des Champs Élysées in Paris of 1911–13 has already been discussed (see Chapter 17).

Although Van de Velde continued to build occasionally throughout all his long life – portions of the Kröller-Müller Museum near Otterloo in Holland were only completed in 1953 – his real swan song was the theatre that he designed and executed in 1913–14 for the Werkbund Exhibition at Cologne. Some trace of the massively plastic quality of his Dresden hall of 1906 – so different from the delicacy and grace of the Art Nouveau in its best period – remained in the curved walls and roof of this edifice, but the whole effect was lighter and plainer, more abstract one might almost say.

The resemblance of Olbrich's Ernst Ludwig Haus of 1901 at the Darmstadt Artists' Colony to Mackintosh's Art School has already been noted (see Chapter 17). At Darmstadt he also continued to build houses for some years, and his work there culminated in the Exhibition Gallery and the Wedding Tower on the Matildenhöhe, erected in 1907. The former was blocky and somewhat classicizing in character, at once very plain and very formal. The latter, of brick, had a more Hanseatic flavour because of its arched and panelled gable; but it also included a novel motif, bands of windows that seem to carry round a corner, that was destined to be very influential everywhere in the twenties.

In the next and last year of Olbrich's life – he died, it will be recalled, at the early age of forty-one – two important commissions came to him away from Darmstadt. The Feinhals house at Marienburg near Cologne repeats the blocky symmetrical composition

of the Exhibition Building, the walls being articulated only with flat oblong panels. The loggia between, however, has a range of Greek Doric columns, clear evidence of the influence of Romantic Classicism that was growing stronger in Germany all through this decade. But Olbrich had little real appreciation of the subtle elegance of the work of Schinkel and his contemporaries, or so it would appear from this house.

The buildings of the East Cemetery in Munich, designed by Hans Grässel (1860–?) in 1894 and completed in 1900, are perhaps the first examples of this sort of 'Neo-Neo-Classicism'. Yet beside the contemporary Neo-Baroque of the Munich Palace of Justice built in 1897 by Grässel's master, Friedrich von Thiersch (1852–1921), nearly as over-scaled and aggressive as Wallot's Reichstag in Berlin, the rather Schinkelesque work at the cemetery appears, in its crispness and its relative simplicity, almost as 'modern' as anything by Olbrich. As has been noted earlier, Schinkel remained a major inspiration to such a leader of the second generation of modern architects as Mies van der Rohe, so this influence has a continuing significance.

A much larger building by Olbrich than the house at Marienburg, also completed in the year of his death, the Tietz (now Kaufhof) Department Store in Düsseldorf, repeats the reiterative verticalism of those portions of Messel's Wertheim store in Berlin that were built in 1900–4, though Olbrich's detailing is not medievalizing like Messel's but rather semi-Classical. Neither of these later things maintains the promise of his Ernst Ludwig Haus; they rather illustrate that general recession from bold innovation which characterized the architecture of this decade in Germany, a recession corresponding more or less closely to the general resurgence of 'traditionalism' in England and America about the same time (see Chapter 24).

Peter Behrens (1868–1940), only a year younger than Olbrich, began his career as an architect at Darmstadt. From 1896 on, before being called there, he had only done decorative work of a rather Art Nouveau order. In his own house in the Artists' Colony of 1900–1 – the only one not built by Olbrich – the interiors are still quite Art Nouveau, but the clumsy exterior has little interest except as a document of revolt. Yet the plan is quite like that of Wright's own house of 1889 in Oak Park, allowing a real flow of space through wide openings between entrance hall, living-room, and dining-room. By 1902 the 'Hessian' interior that he contributed to the Turin Exhibition was wholly rectilinear, presumably under the influence of Olbrich and Mackintosh. A similar severity characterized the work that he did, much of it merely open pergolas, for the Düsseldorf Garden and Art Exhibition of 1904.

By this time Behrens's personal style was maturing, although his debt to Olbrich remained very evident. The Art Pavilion for the North-West German Art Exhibition held in Oldenburg in 1904 was a symmetrical composition of cubical masses, the flatness of their surfaces even more emphasized by linear panelling than in Olbrich's work. The Obenauer house of 1905–6 at Sankt Johann near Saarbrücken is somewhat more loosely composed; indeed, its white stucco walls, slated roofs, and grouped windows somewhat recall Voysey's houses, which were by this time very well known in Germany thanks to the *Studio* and Muthesius's book. The garden front, however, is symmetrical and the plan not as open as that of his own house of four years earlier.

In Behrens's next two buildings, the small Concert Hall in the Flora Garden at Cologne of 1906 and the large Crematorium at Delstern near Hagen completed the following year, the geometrical panelling in black and white, used both inside and out, recalls a little San Miniato in Florence. But the blocky geometry of the Oldenburg pavilion and its smooth flat surfaces were also repeated, so that both these buildings have a curiously model-like look as if they were made of sheets of cardboard.

Behrens's two finest productions up to this time, the Schröder House of 1908–9 and the Cuno House of 1909–10, both at Eppenhausen near Hagen, have a considerably more solid appearance, with quarry-faced masonry below and roughcast walls above (Plate 148B). They are also less blocky. The symmetrical façades, which correspond to completely symmetrical plans, are at once more tightly and more subtly composed. Here English influence seems to have been superseded by an attempt, rather more successful than Olbrich's at Marienburg, to emulate Schinkel. A third early house by Behrens, the Goedecke house at Oppenhausen of 1911–12, is equally formal but not symmetrical, recalling thus a little Schinkel's Schloss Glienecke near Potsdam.

Somewhat similar to Behrens's work of this period in its evident derivation from German Romantic Classicism, but more delicate in scale, was the work of Heinrich Tessenow (1876–1950), notably his Festival Theatre of 1910–13 and the other buildings he designed and erected for the Art Colony at Hellerau near Dresden. But such German work, of which a great deal was produced in the decade before the First World War, corresponds rather closely, despite the frequent stylization of detail and the serious concern with geometrical clarity in composition, to the Neo-Georgian of England and America in the early twentieth century, and also to much parallel work in the Scandinavian countries that is usually of rather higher quality (see Chapter 24).

Moreover, those Frenchmen who castigated the Théâtre des Champs Élysées as 'Boche' during the First World War because of the presumption that it was designed by Van de Velde, born a Belgian but head of a German art school, were not altogether wrong. In its scraped Classicism and rigidly geometrical *ordonnance* Perret's façade was not at all remote from one of the most characteristic German modes of the years just before 1914. Perret's industrial work was, of course, much more significant for the future.

So also with Behrens it was the challenge that his position as architect of the A.E.G. brought of working in the industrial field that made him briefly a rival of Wright, and even more particularly of Perret, as a major architectural innovator. Behrens's first work for the A.E.G., the Turbine Factory at the corner of the Hussitenstrasse and the Berlichingenstrasse in Moabit, an industrial suburb of Berlin, was erected in 1909 immediately upon his appointment as successor to Messel. This broke new ground in several ways. It was built partly of poured concrete, partly of exposed steel, with both materials very directly expressed (Plate 149A). The side wall of glass and steel more than rivals in its openness those of the department stores designed by Art Nouveau architects (Plates 131B and 133). But Behrens's façade, in contradistinction to theirs, has no applied ornament whatsoever. Moreover, he ordered the whole composition as carefully as Schinkel might have done if either large factories or metal-and-glass construction had come within his purview.

The end façade of the Turbine Factory is slightly less frank in design. The concrete corners on either side of the central window-wall of metal and glass are battered and striated horizontally as if to suggest rusticated masonry. The gable of the multi-faceted roof is brought forward to shelter the window-wall; this projects slightly in front of the concrete corners, almost like a Shavian bay-window raised to industrial scale. The treatment of the window-bands of the lower concrete block to the left resembles that of Schinkel's articulated walls on the Berlin Schauspielhaus, but with all the Greek mouldings omitted. Thus the functional elements of a factory executed throughout in new materials were here for the first time in Germany architectonically ordered with no dependence on decoration of any sort. Wright had done much the same four years earlier in his little-known E.-Z. Polish Factory in Chicago, but the scale of that is modest and its walls are not extensively fenestrated. Perret had come closer to it in his Garage Ponthieu in Paris, also built in 1905. There can be little question, however, that Behrens's is the finest building of the three.

In two more factories built in 1910 for the A.E.G., both much larger but neither of them quite so striking, Behrens broadened his range as an industrial architect. The High Tension Factory in the Humboldthain is of brick, not concrete or steel. Except for a few minor elements somewhat suggesting pedimented temple-fronts translated into an industrial vocabulary, he handled the vast façades here with the same directness as the side elevation of metal and glass at the Turbine Factory. The Small Motors Factory in the Voltastrasse is similar but much finer (Plate 148A). There the brick piers have rounded corners and rise unbroken almost the full height of the building. The effect is somewhat like that portion of Messel's Wertheim Store which was built in the late nineties, but the scale is larger, and there is none of Messel's rich, half-traditional, half-Art-Nouveau detailing. Instead, the careful proportioning and the suave but extremely straightforward treatment of the structural elements again suggests Schinkel's sort of 'rationalism' yet succeeds in doing so, as at the earlier Turbine Factory, with almost no reminiscence of actual Romantic Classical forms.

Thanks to the widening range of responsibility that German industry was now ready to give architects, Behrens not only built these big factories for the A.E.G. and also redecorated their retail shops all over Berlin, but he was soon asked in addition to provide some blocks of flats for the company's workmen at Hennigsdorf outside Berlin. This was a social challenge which neither Wright nor Perret had to meet. (In fact, however, Wright did in 1904 design terrace-houses that were never executed for Larkin Company workers in Buffalo; while in France low-cost housing had a very important place in Garnier's projects for a 'Cité Industrielle'.) Henceforth, such housing would be a major preoccupation of most modern architects. This is true not only in Germany but all over the western world, and especially in Holland and Scandinavia. The origins of low-cost housing go back to the 1840s in England when Henry Roberts, whose Fishmongers' Hall in London has been mentioned, became the first architect to specialize in this field. But the early history of housing [3] is of more sociological than architectural interest; moreover, what the nineteenth century esteemed to be 'model' low-cost dwellings have too often had to be demolished as 'sub-standard' in the twentieth. The

concerted interest and activities of the ablest modern architects may spare the twentieth century the ignominy of building as a public service what posterity will consider slums.

Various small A.E.G. factories for making porcelain, lacquer, and other specialized products were also erected by Behrens in 1910 and 1911, none of particular interest. In 1911–12, however, there followed the Large Machine Assembly Hall at the corner of the Voltastrasse and the Hussitenstrasse near the Small Motors Factory. This rivals in interest the Turbine Factory of 1909. Once more a great rectangular volume is covered with a multi-faceted steel-framed roof, the structure below being in this instance also of steel with no use of concrete. The metal frame is largely filled with glass, but brick was introduced at the base and on the ends. The scale of this unit is less monumental than that of the Turbine Factory, though the size is much greater. The general effect, particularly that of the interior with its travelling cranes, is at once light and dramatic. A big A.E.G. plant was also built by Behrens at Riga in Russia in 1913.

Three large non-industrial commissions of 1911–12 show how this work for the A.E.G. affected Behrens's approach to design. Although it is built of stone not brick, the German Embassy (Plate 27A) opposite Monferran's St Isaac's Cathedral in Petersburg is, at first sight, deceptively like the Small Motors Factory. Actually, the façade has a range of engaged Doric columns, but by their tall slim proportions and their lack of entasis these were, so to say, 'industrially' stylized. The great scale, the absolute regularity, and a certain coldness surely derived in part from the factories of the previous two years; but they also recall the Romantic Classical monuments of Alexander I's time in Petersburg.

Behrens's enormous office building for the Mannesmann Steel Works on the Rhine at Düsseldorf was less successful, as was also that for the Continental Rubber Company in Hanover. The latter was designed in 1911 and begun in 1913, but not completed until after the First World War, in 1920; it was destroyed in the Second World War. The heavily reiterative sort of scraped Classicism Behrens used for these overpowering masonry blocks lacked the subtlety of composition of the Hagen houses yet retained something of the directness of expression of the A.E.G. factories. They were very typical, however, of much large-scale German building of the second and third decades of the century. This mode developed fairly directly out of the Berlin work of Messel and Ludwig Hoffmann, although it was usually much less elaborately 'traditional' in its detailing and even more aggressive in scale; a quite similar mode returned to official favour under Hitler in the mid thirties.

With these big office buildings by Behrens and others one may compare the work of this period by various other German architects who preferred less classicizing modes. Early buildings by Fritz Schumacher (1869–1947), such as his crematorium in Dresden of 1908, also illustrate the megalomaniac tendencies of the period that seem so expressive of the expansive ambitions of William II's Second Reich. The many schools that Schumacher built in Hamburg just before the First World War are simpler, although still rather heavily scaled, and more comparable in quality to Behrens's work. One in particular, built in 1914 in the Ahrensburgerstrasse, almost echoes the elongated colonnade of Behrens's Petersburg Embassy, but the 'columns' are plain piers executed in dark red brick[4] and strung along a front that is concave not flat. The bath-house at

Eppenhausen, also of 1914, is very like the schools; while in the Kunstgewerbe Haus of the previous year on the Holstenwall in Hamburg a similar mode was employed for what is, in effect, a large office building. This seems to have initiated a local tradition of design for commercial buildings which was maintained in the twenties with little change, not only by Schumacher but by several other Hamburg architects. Schumacher's cemetery chapel, built as late as 1923, follows much the same line.

In Stuttgart the railway station by Paul Bonatz (1877–1951) and F. E. Scholer (b. 1874) is the finest though not the largest of several built in Germany in these years. Designed in 1911, it was started only in 1914, just as the enormous and much less interesting one at Leipzig with its six parallel sheds, begun by Wilhelm Lossow (1852–1914) and M. H. Kühne in 1907, was reaching completion. That at Stuttgart was not finished until 1927 because of the interruption caused by the First World War. This structure has a rather Richardsonian flavour in its extensive unbroken wall surfaces of rock-faced ashlar and its plain round arches (Plate 152). But the influence here came rather from the Munich architect Theodor Fischer (1862–1938). Fischer's Romanesquoid churches, such as that of the Redeemer in Munich of 1899–1901 and the Garrison Church of 1908–11 in Ulm, were among the largest and most strikingly novel built in the opening years of the century in Germany; in the latter he even used ferro-concrete principals to carry the roof of the nave. Fischer's Art Gallery of 1911 in Stuttgart was both more delicate in scale and rather more archaeological in its detailing; Bonatz's Stuttgart work is bolder, simpler, and quite as admirably expressive of the traditional materials used.

With the Stuttgart Station may be contrasted the rather earlier one at Hamburg that Heinrich Reinhardt (1868–?) and Georg Süssenguth (1862–?) built in 1903–6. There the major sections – shed, concourse, etc. – designed by the engineer Medling resemble rather closely Contamin and Dutert's Galerie des Machines at the Paris Exhibition of 1889. These great constructions of iron and glass fortunately quite overshadow the low ranges of accessory elements in masonry, with ornament still in the Meistersinger mode of the eighties, contributed by the architects. The differences between these two notable stations well illustrate that reaction towards masonry construction and a more or less traditional approach to design that was developing strength in the decade preceding the First World War. In the history of the railroad station as a type the Hamburg Hauptbahnhof represents, not a new beginning, but the end of a line descending from the great shed-dominated stations of the mid nineteenth century.

Intermediate in date between the Hamburg and Stuttgart stations was that at Karlsruhe built by August Stürzenacker in 1908–13. Although masonry construction and masonry forms dominate here as at Stuttgart, the simplification of mass and space composition throughout, and above all the elegant detailing, give evidence of the continuing leadership of Olbrich at the time of his death. Olbrich never built a station himself, but he won third place in the 1903 competition for that at Basel and second place in the 1907 competition for Darmstadt.

In other specialized fields of building a forward line of development is more evident. Two big circular halls, one in Frankfort built by Thiersch in 1907–8, the other in Breslau built by Max Berg (b. 1870) in 1910–12 (Plate 149B), are more notable than the

contemporary railway stations at Stuttgart and Karlsruhe. Like Behrens's industrial work for the A.E.G., these structures illustrate the vital stimulus that German architects were obtaining in these generally somewhat reactionary years from the use of engineering solutions and materials other than masonry – steel at Frankfort, ferro-concrete at Breslau – to cover and enclose space. In the case of Thiersch this is the more remarkable when one remembers the ponderous traditionalism of his Neo-Baroque Palace of Justice in Munich built ten years before. While Berg on the exterior of his vast hall approaches the attenuated Classicism of Perret's work of the next decade, the superb interior reminds one at once of Piranesi and of the much later structures of Nervi.

German architects of this generation were rarely able to carry over into the designing of more conventional structures the boldness and freshness of approach of their large-scale work. They seem to have felt no such call to regenerate architecture as Wright had imbibed from Sullivan; nor did they, like Perret, attempt to use the new materials and the new structural methods consistently for all sorts of buildings whatever their particular purpose. German production before and after the First World War, as represented in the *œuvre* of such then highly esteemed figures [5] as Oskar Kaufmann (b. 1873), German Bestelmeyer (1874–1942), and Wilhelm Kreis (b. 1873), to mention but three of the best known, shades over almost imperceptibly from industrial and semi-industrial buildings of bold and original character to a range of structures in various tasteful modes that are, in retrospect, hardly distinguishable from the traditional work of this period in other countries. This has already been noted as regards Tessenow. Characteristic examples of these men's work were Bestelmeyer's extensions of the University and the Technical High School in Munich, of 1906–10 and 1922 respectively, both in the local tradition of Theodor Fischer's work. The Museum of Prehistory in Halle that Kreis built in 1916 with K. A. Jüngst was more traditional even than Bestelmeyer's work, although Provincial-Roman rather than Romanesque in inspiration.

As in England in the late nineteenth century, individual idiosyncrasies were much cultivated, and architects tended to specialize in particular types of buildings. Kaufmann, for example, had a very personal Neo-Rococo manner, delicate and frivolous, that he employed with real appropriateness in various Berlin theatres, notably the remodelling of the Kroll Oper and the Komödie, both carried out in 1924. But Behrens remains on the whole the most interesting and accomplished architect of this generation, whose opportunities for building were often to be even greater under the Weimar Republic in the twenties than they had been earlier under the Kaiser.

No very great change is observable in Behrens's work after the First World War. The terrace-houses that he built in 1918 for A.E.G. workers at Hennigsdorf, and the semi-detached dwellings of a low-cost housing estate for which he was responsible at Othmarschen near Altona in 1920 are simple and solid in construction, quite like those of before the war but more conservative in design. However, at this point comes a characteristic, though brief, change of phase that illustrates his ready response to influences from the new painting and sculpture of the day. In the big complex erected for the I. G. Farben Company in 1920–4 at Höchst Behrens gave up the direct expression of new industrial building methods characteristic of his A.E.G. factories of 1909–11. The

exterior was massive and almost medievalizing, even though the ranges of arches were of the unconventional parabolic form that seems to have appealed especially to Expressionist taste. In the tall glass-roofed court inside the angular forms of Expressionism were most strikingly evident; but he also introduced wholly abstract wall paintings and a few rather Constructivist lighting fixtures elsewhere in the reception rooms and offices. The result was, to say the least, ambiguous and incoherent, although the exterior was not unimpressive in its general effect.

Expressionist influence had first appeared a little earlier than this in the work of other German architects, but it reached a peak in these years of the early twenties. In his pre-war industrial work Hans Poelzig (1869–1936) was not yet Expressionist. The chemical works that he built at Luban near Posen in 1911–12 rivalled in size and even in directness of expression – though not in distinction – Behrens's factories for the A.E.G. After the war, however, Poelzig became a principal exponent of Expressionism in architecture. One of the earliest and most striking examples of Expressionist design on a large scale was his remodelling of the Grosses Schauspielhaus in Berlin in 1919. Here the cavernous, stalactite-ceilinged interior round the central circular stage was itself like an Expressionist stage-set and the planning implied a major revolution in dramatic presentation that never, in fact, quite came off. Yet his industrial work of the early twenties soon became much more straightforward again, and he later reverted to something very comparable to the stripped monumentality of Behrens's Düsseldorf and Hanover office buildings. The most prominent extant example of this is the enormous I.G. Farben Company headquarters that he built in 1930 in Frankfort.

One can hardly leave the subject of Expressionism in German architecture, largely confined though its more extreme manifestations were to a very short post-war period of three or four years, without mentioning two more names, those of Fritz Höger (1877–1949) and Dominikus Böhm (1880–1955).

The twenties saw a few skyscrapers erected in Germany, none of them of the great height then current in America, but sometimes as conspicuous above the existing skyline as the first skyscrapers in New York had been in the seventies. The largest, though not the tallest, and certainly the most impressive was the Chilehaus, built by Höger in Hamburg in 1923, with its Schumacher-like piers of patterned brickwork and its upper three storeys receding behind narrow terraces (Plate 153A). A large and irregular site encouraged the employment of a long double curve on the right-hand side of the hollow block, and the sharp angle at that end produced automatically a silhouette of the shrillest Expressionist order. Actually, however, Höger like other German architects was already returning by this time from earlier and wilder Expressionist adventures. To what extent he was aware of the skyscrapers of Sullivan is uncertain. The emphatically vertical scheme of design he used here, with arches linking the brick piers together below slab cornices, certainly suggests some knowledge of them, even though they were by this time all but forgotten in America.

Considerably taller than the Chilehaus, but not otherwise very distinguished, were two other German skyscrapers of the twenties. Kreis's Wilhelm Marx Haus of 1924 in Düsseldorf, a thirteen-storey tower crowned with curious open-work tracery of inter-

laced brick, is still a conspicuous feature of the local skyline; but the Planetarium and associated buildings that he erected at the Gesolei there two years later are better examples of the fairly restrained mode that he and others usually employed in these years. The plainer and better proportioned seventeen-storey Hochhaus am Hansaring in Cologne was built in 1925 by Jacob Koerfer (b. 1875).

Although only a few skyscrapers actually rose in European cities in the twenties, the theme nevertheless fascinated the younger architects. Many bold designs for them were projected, some of them of real significance for later developments in both the Old World and the New (see Chapter 22). The international competition for the Chicago Tribune Tower held in 1922, which many Europeans entered and the Finn Eliel Saarinen all but won, signally focused attention on a type of building hitherto considered unsuitable for the Old World, and even today accepted only on sufferance in much of Europe (see Chapters 21 and 25).

The churches of Böhm, all of them Catholic, have a suavity that Höger's work lacks, but at least equal forcefulness. The Suabian War Memorial Church of 1923 at Neu-Ulm is like an imaginative film-set of the period, being a sort of free fantasia on Gothic themes with little feeling of structural reality. But the boldest of Böhm's churches, that he built at Bischofsheim in 1925, seems almost to take off from the engineer Freyssinet's hangars at Orly. The paraboloid forms are here very frankly used; yet the concrete 'barrel' vault of the nave, intersected by lower cross-vaults over the bays of the aisles, creates a strong emotional effect that is both Gothic and Expressionist in tone. The finest of his churches, however, may be Sankt Engelbert at Cologne-Riehl of 1931–3. This is circular in plan and very ingeniously roofed, not with a dome,[6] but with lobes of paraboloid barrel-vaulting.

However, in a church built in 1929, Sankt Josef at Hindenburg in Upper Silesia, Böhm had already turned away from the emotionalism of his earlier work towards simple rectangular forms.[7] This simplicity he has maintained in his post-war churches, with the result that his last work, Maria Königin,[8] built at Marienburg outside Cologne in 1954, with its squarish plan, very slender metal supports, and side wall of glass, has very little churchly flavour left. Yet some of Böhm's very late projects indicated that many of his ambitions of thirty years ago still remained with him to the end; they may well some day find effective expression at the hands of his son now that a more emotional approach to church-design is being rather generally revived internationally.

Compared to such a French church of the twenties as Perret's Notre-Dame at Le Raincy or such a Swiss church as Moser's Sankt Antonius in Basel, both using concrete in the rectangular and skeletal mode usually preferred at that time, Böhm's churches of the twenties once seemed semi-traditional rather than modern. One can now see, however, that there is a different and more emotive line of development in modern church architecture to which, for example, Gaudí's unfinished churches at San Coloma and Barcelona belong, as do also such later Latin American examples in ferro-concrete as the Purísima at Monterrey in Mexico by Enrique de la Mora (b. 1907) of 1939–47, São Francisco at Pampulha in Brazil, built by Oscar Niemeyer (b. 1901) in 1943, Nuestra Señora de los Milagros in Mexico City by Felix Candela (b. 1910), completed

in 1955, and several completed in the last few years by Juvenal Moya at Bogotà in Colombia[9] (see Chapters 23 and 25). Expressionism may have been less of a cul de sac than its brief impingement on Behrens might lead one to suppose. Certainly it was a potent force for a few years after the First World War, and played then a significant role in breaking down the rule of 'tasteful' traditionalism inherited from the preceding decade.

As the twenties progressed, however, and extreme Expressionist influence generally receded, Behrens gave evidence of his awareness of the quite different direction that modern architecture had just taken in the hands of certain younger men, several of whom had actually been his own pupils or at least his employees. In 1925–6 he built New Ways, a house in Northampton, England, for S. J. Bassett-Lowke, earlier a client of Mackintosh's. With its smooth white stucco walls, horizontally grouped windows, and flat roof, this is of considerable historical interest, although of very little intrinsic merit.[10] No such advanced work had yet been done in England by local architects, and at this time only a very few houses of a comparably advanced character had been executed anywhere (see Chapter 22).

Despite his unusual openness of mind, which led Behrens in his fifties to attempt to rival juniors barely started on their careers – or, quite as probably, because of the lack of strong personal conviction of which this gives evidence – Behrens did not, like Perret and Wright in later life, continue to be very creative beyond this date. In Vienna, where he was called in the mid twenties to be professor of architecture at the Akademie, he settled into a sort of compromise mode. The low-cost housing blocks that he built in Vienna in 1924–5 on the Margaretengürtel, in the Stromstrasse, and in the Konstanziastrasse illustrate his characteristic uncertainty of direction in these years. If considerably sounder, they are also much less adventurous than the Bassett-Lowke house designed at almost the same time. This can be seen still more clearly at the Weissenhof in Stuttgart where many of the buildings of the German Werkbund's housing exhibition held in 1927 remain in use today. There Behrens's block of flats stands very near one designed by the director of this exhibition, his former assistant Mies van der Rohe (Plate 162B), and not far from houses by such other leaders of the new generation as Gropius, Le Corbusier – who had both worked in his office also – and Oud (see Chapter 22). The contrast between his massive block and their light and open structures is the more striking because Behrens here so evidently set out to meet his juniors more than halfway.

Behrens's very latest work, the factory for the Austrian Tobacco Administration at Linz built in 1930 in association with Alexander Popp (b. 1891), was rather less conservative because of the nature of the commission. It is less mechanistic than the industrial work done so much earlier for the A.E.G., yet nonetheless impressive for its consistency of treatment and also for its human scale. The Linz factory provides a not unworthy concluding note to Behrens's ambiguous career.

The vast productivity of the German architects of Behrens's generation, both before and after the First World War, building in a boom which only came to a close around 1930 with the world-wide depression, makes it difficult to choose specific examples

worth the emphasis of even brief mention. The situation is made no easier by the considerable versatility of most of the leading figures. Those few buildings that have been specifically mentioned – even most of Behrens's own work except for his A.E.G. factories – should be considered typical of the upper level of German achievement in these decades rather than monuments of unique distinction like the best things done by Perret and by Wright in the same decades. Yet, it is worth noting, for a long time neither Wright nor Perret had much effect on the general scene in their own countries, for all the seminal effect of their influence on younger architects everywhere; while the Germans achieved a tremendous volume of what can be called 'half-modern' work that notably changed the whole character of several large cities. Thus the way was prepared for a very early and widespread acceptance of the next stage of modern architecture, an acceptance so premature that it induced in the thirties a sharp reaction.

In 1933 a regime rose to power in Germany with doctrinaire objections to the latest phase of modern architecture, ironically castigated as *Kultur-Bolschevismus* immediately after the Bolsheviks had rejected it as unacceptably bourgeois! As a result, the leaders of the younger generation almost all emigrated (see Chapter 23); while with few exceptions those German architects who remained at home turned backwards in their tracks, though not very far backwards. Most German production in the Nazi period is all but indistinguishable, indeed, from what was considered most advanced before the First World War and even for some years thereafter. Very little of it deserves specific mention. As was the case around 1910, the more nearly the structures were of an engineering order – as for instance Bonatz's bridges for the Autobahn built over the years 1935–41 – the less they were likely to be stylized along the heavy near-Classical or semi-medieval lines the later Imperial period had established as conventional a generation before. Even the housing that Bonatz built after the War in 1945–6 at Ankara in Turkey and his Opera House there of 1947–8 are hardly as advanced as his Zeppelinbau office building of 1929–31 opposite the station in Stuttgart. Like Behrens at the same time, he had attempted there – with a certain amount of real success – to follow the ascetic principles of the younger generation that had just been so well illustrated at Stuttgart in the Werkbund Exhibition of 1927 on the Weissenhof (see Chapter 22).

Immediately after the Second World War there was for several years some continuing use of the modes of 1910, so to call them. This was natural because of the prolonged absence of most of the leaders of the intervening generation from the country – Gropius, Mies, and Mendelsohn never returned – and the renewed activity of so many of the older generation who had made their reputation in the period 1905–25 with which this chapter has chiefly dealt. Today it is as if Germany had lived through the stylistic developments of the twenties a second time, and now the newer sort of architecture is once again as ubiquitous there as it was in 1930.

These tidal waves of changing taste in Germany, each representing a sharp reaction against its predecessor, make difficult such a focusing of attention on a few creative and insurgent figures as gives dramatic pungency to the history of these decades in America and France. *Jugendstil*, *Expressionismus*, *Neue Sachlichkeit*,[11] these general movements, more than even so distinguished an individual as Behrens, are the real protagonists of

the German story from 1900 to 1933; but in the international frame of reference they must be subordinated to the broader currents that dominated the architecture of the western world in the period. In that frame of reference the contribution of a few Austrians more than equalled that of the more prolific Germans, down at least to the First World War.

CHAPTER 21

THE FIRST GENERATION IN AUSTRIA, HOLLAND, AND SCANDINAVIA

THE development of modern architecture in Austria between 1900 and the Nazi conquest has many connexions with that of Germany. The Austrian Olbrich had as much as anyone to do with setting off the reaction against the Art Nouveau in Germany after 1900. From the mid twenties, Behrens was living in Austria, not in Germany. Even so, and particularly for the years before the First World War, there is a separate and purely Austrian story, more limited than the German story yet at least equally notable for highly distinguished achievement. Two Austrian architects at least, Otto Wagner and Adolf Loos (1870–1933), if not Wagner's pupil Josef Hoffmann (1870–1956), were the equals of any of the leading German architects of their day, except perhaps Behrens. Wagner, already sixty in 1901, produced his finest work after that date. The Wiener Werkstätte, founded by Hoffmann in 1903, provided a centre of activity in the field of decoration comparable to what the Century Guild and the Arts and Crafts Exhibition Society had offered earlier in England. Above all, Loos – in part possibly because he, of all Europeans of his generation, knew American architecture best – demonstrated, from his earliest executed work of 1898, a determination to renew the art of building that was as revolutionary as Wright's.

Soon after 1900 Wagner threw off all Art Nouveau influence. Yet the finest element in his masterpiece, the central hall of the Postal Savings Bank in the Georg Coch Platz in Vienna of 1904–6, still retains in the curvature of its glass roof and the tapering of its metal supports something of Art Nouveau grace (Plate 154B). The exteriors of this massive edifice are lightened by the very original treatment of the geometrically organized wall-planes; the thin plaques of marble which provide the sheathing suggest volume, not mass, and the delicate relief of the few and simple projections quite avoids the ponderousness of most contemporary German work. As in so much of the best German work, however, the severity of form and even the specific character of certain ornamental features reflect in a stylized way the Grecian mode of a hundred years earlier. This is somewhat surprising in Vienna, where Romantic Classicism had been on the whole both unproductive and uncreative, but doubtless Wagner knew Schinkel's work as well as did Behrens – certainly his lightness of hand is more comparable to Schinkel's.

Not least interesting technically is the consistent employment of aluminium [1] in this building. The sculptured figures by Othmar Schimkowitz which crown the façade and the visible bolts that retain the granite and marble plaques are of this new metal; so also, apparently, are the structural members that support the glazed roof of the hall; at least they are completely sheathed with it. The large rear block of the bank dates from 1912, but the original vocabulary was retained by Wagner with only some slight simplification of the detailing of the plaquage.

Sankt Leopold, the cruciform church that serves as the chapel of the Steinhof Asylum on the Gallitzinberg at Penzing outside Vienna, was built by Wagner in 1904–7 at the same time as the Postal Savings Bank. This crowns his extensive hillside layout of the whole establishment, comparable in scale to the French asylums of the mid nineteenth century, but for the other buildings he was not directly responsible. Sankt Leopold is a large domed monument inviting comparison with Schinkel's Nikolaikirche at Potsdam. However, the linear stylization of the detailing inside and out brings to mind Olbrich's and Behrens's buildings of its own day. There is no paraphernalia of Greek orders, yet the conceptual organization of the elements is certainly in the Romantic Classical tradition, with the four arms each quite cubic and the hemispherical dome raised on a cylindrical drum. As at Schmidt's Neo-Gothic Fünfhaus church of the 1870s in Vienna, there are echoes of Fischer von Erlach's Baroque Karlskirche here also, but the spirit is not at all Baroque. All the visible metalwork here, the sheathing of the dome, the statues of angels by Schimkowitz and of saints by Richard Luksch, and even the heads of the bolts that retain the marble plaques on the exterior walls, is of gilded bronze, not aluminium. This has not worn as well, for it has lost its gilt coating, peeled off many of the bolts, and streaked the walls with verdigris. Inside the church the mosaics by Rudolf Jettmar and the stained glass by Kolo Moser combine to rival the most sumptuous domestic ensembles produced by the Wiener Werkstätte, but the general effect, while light and even gay, still has a monumental dignity appropriate to a church. The walls are of plain white plaster, and narrow bands of geometrical ornament in gold and blue panel the cross vault – for, curiously enough, the central dome is not exploited internally.

Crisper in design and much simpler altogether than the Steinhof church are the blocks of low-cost flats that Wagner built in 1910–11 at 40 Neustiftsgasse and next door at 4 Döblergasse. Their walls are covered with stucco lined off to suggest plaquage, and the decoration is reduced to thin bands of dark blue tiles that merely outline the surface planes. Needless to say, these blocks have not survived as well as the expensively built bank and church. Wagner's last works, a hospital not far from the Steinhof Asylum and his own house at 28 Hüttelbergstrasse, both in Penzing and of 1913, are typical but rather less interesting.

Hoffmann's first architectural work of any consequence, a Convalescent Home at Purkersdorf built in 1903–4, was already simpler than Wagner's hospital of a decade later, if considerably less architectonic in effect. The plain white stucco walls are full of ample windows almost devoid of surrounding frames and very regularly disposed; cornices and other conventional elements of detail are either omitted or reduced to an absolute minimum. The result is a structure that would still look very fresh and crisp half a century later were it not, like Wagner's flats, in shabby physical condition.

As Hoffmann's founding of the Wiener Werkstätte indicates, he was at heart less an architect than a decorator, like so many of the leading English and Scottish designers of this period and the immediately preceding one. The important commission to build a large and extremely luxurious mansion on the edge of Brussels in 1905, the Palais Stoclet at 373 Avenue de Tervueren, gave his decorative ambitions a free rein (Plate

154A). Yet the exterior of this has a good deal of the geometrical clarity of the Convalescent Home and rather more of Wagner's architectonic values. The carefully ordered asymmetrical composition is dominated by the stair-tower, somewhat as the best Italian Villas of the previous century were dominated by their off-centre belvederes. The walls appear to be no more than thin skins of marble plaques, like Wagner's, with the frequent and regularly spaced windows brought forward into the same surface plane. A decorative edging of gilded metal defines these smooth wall planes, giving the whole something of the fragile look of D'Aronco's exhibition buildings. This is especially true of such a complex accent as the tower, with its tall stair-window.

The Stoclet house, as finished after six years in 1911, has some very fine interiors, cold and formal but sumptuously simple in their use of various marbles. The marble is quite undecorated on the delicate rectangular piers in the two-storey stair-hall; but on the walls of the dining-room it carries inlaid patterns of almost Art Nouveau elaboration. The general effect is rather curious, somewhat resembling characteristic English interiors by Voysey and his contemporaries carried out, not in stained or painted wood, but in figured and polished marbles; yet undoubtedly this is one of the most consistent and notable great houses of the twentieth century in Europe. Seeking to provide a new sort of elegance that even the best English domestic work lacked, Hoffmann achieved here an urbane distinction only approached by Gill and the Greenes at this time in America. His houses in Vienna, such as that at 5–7 Invalidenstrasse of 1911 and the suburban one at 14–16 Gloriettegasse in Hietzing, are not in a class with the Palais Stoclet but more comparable to Olbrich's or Behrens's houses of this period in Germany. Work of similar character and equal distinction was done by Fabiani in Vienna before he settled in Gorizia in 1920. Very Hoffmann-like indeed is his building for the publisher Artaria at 9 Kohlmarkt of 1901. His Urania in the Uraniagasse of 1910 also rivals Hoffmann's best.

Successor to Wagner in general esteem, as also in his professorship at the Vienna Akademie, Hoffman developed his personal style no further in the work that he did after the First World War. At the Austrian Pavilion in the Exhibition of Decorative Arts of 1925 in Paris – an exhibition organized in part to reclaim for France the primacy in the arts and crafts of decoration that had by this time passed to Vienna, largely because of Hoffmann's leadership – the rather Neo-Rococo stuccoed block that he provided was much less advanced in character than the greenhouse-like portion designed by Behrens. However, his low-cost flats in the Felix-Mottlstrasse in Vienna, built like those of Behrens in the mid twenties, retain a good deal of the quality of his early sanatorium at Purkersdorf. Crisp and clean, they are distinctly less blank and ponderous than Behrens's, if also less advanced in design that those by Josef Frank (b. 1885). Frank, a somewhat younger Viennese architect of considerable ability but lesser reputation than Hoffmann, left Vienna to settle in Sweden when the Nazis took over Austria.

The international acclaim that Viennese low-cost housing of this period received when new seems rather exaggerated now. From the first its significance was more political and sociological than architectural. It happened to be built, moreover, mostly by men not of the newest generation of architects, at just the time when an architectural

revolution was taking place in France and Holland and Germany (see Chapters 22 and 23). Henceforth that revolution, brilliantly illustrated as regards low-cost housing in the German Werkbund's international exhibition of 1927 at Stuttgart, would affect most notably the design of such projects throughout the western world. The Viennese housing exhibition of 1930, a modest counterpart to that in Stuttgart, came too late to reform the local tradition, which has largely survived down to the present.

The work of Hoffmann's exact contemporary Loos dates less than his and was of the greatest importance in providing inspiration to the modern architects of the second generation who brought about the revolution of the twenties. This inspiration from Loos is comparable in significance to that which the younger architects found in the work of Wright and of Perret. Loos, unlike other Austrians of his period, was primarily interested in architecture, not in decoration – indeed, he wrote in 1908 an article [2] claiming that 'ornament is crime', an attitude shared by no other architect of his generation, and least of all by his fellow Viennese. It was Loos's tragedy that a very large part of his employment before the First World War was in remodelling and redecorating flats; this constrained him so little, however, that many of these may easily be taken in photographs for completely original house interiors (Plate 155B).

Although Loos began his career in the late nineties when the Art Nouveau tide ran highest, he was never at all affected by it, in part doubtless because he had spent the years 1893–6 in America beyond the range of Art Nouveau influence. The interior of the Goldman haberdashery shop in Vienna, which he designed in 1898, was entirely straight-lined and quite without any ornament; in the Café Museum of the next year the segmental ceiling and the bentwood chairs were curved, but only for structural reasons. Both are now gone, although the extant Knizé men's shop in the Graben in Vienna of 1913 gives some idea of what the former was like.

It is Loos's houses around Vienna, in Plzen, in Brno, in Montreux, and in Paris that place him as one of the four or five most important architects of his generation. His finest single extant work, however, is a small bar in Vienna. From the first he designed from the inside out, reducing his exteriors to square stucco boxes cut by many windows of different sizes and shapes. The results are very like Gill's houses in California, as has been noted already, but with no such traditional elements as Gill's arched porches. This is especially true of the Gustav Scheu house in the Larochegasse in the Vienna suburb of Hietzing, almost the only one left in Austria in something closely approaching its original condition (Plate 155A; Figure 43). Loos was an enthusiastic admirer of English domestic architecture; this bent of his taste is curiously illustrated by his liking for English eighteenth-century furniture of the Queen Anne and Chippendale periods, which looks today so out of place in his severely rectangular rooms. But the architectural character of his interiors is never influenced by eighteenth-century modes, but only by the most advanced English work of the opening of the century which he knew well through the *Studio*. Articulated by plain wooden structural members like Voysey's interiors or, on occasion, by similar piers clad with marble like Hoffmann's in the Stoclet house, Loos's suites of living areas are as flowing as Wright's [3] but he never provided as much interconnexion between indoors and out.

Of a succession of houses built before the First World War the much mishandled Steiner house of 1910 and the above-mentioned Scheu house of 1912, both in suburbs of Vienna, are perhaps the finest. The Villa Karma, built much earlier at Montreux in Switzerland in 1904–6, had an almost Hoffmann-like sumptuousness of materials and finish within; but in the main Loos kept, like Voysey and Wright, to plainer effects and simple dark wooden trim.

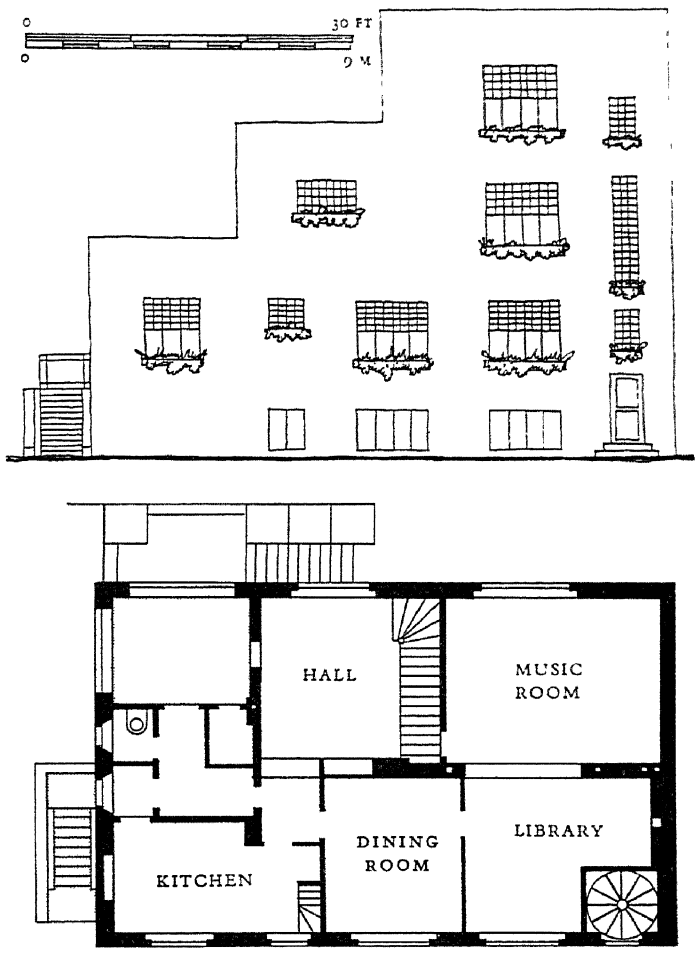


Figure 43. Adolf Loos: Vienna, Gustav Scheu house, 1912, plan

At first his houses looked, externally, rather like quite conventional ones from which all elements of traditional detail had been scraped, as do many of the contemporary projects included in Garnier's 'Cité Industrielle'. Gradually, however, Loos came to handle his simple elements of external design with more of that assurance which his domestic interiors had displayed from as early as the flat in Vienna remodelled for Leopold Langer in 1901 (Plate 155B). Both the placing and the sashing of his windows were more carefully studied; and the proportions and the juxtapositions of his rather boxy masses were abstractly ordered well before a Neoplasticist like George Vantongerloo in Holland arrived at somewhat similar effects in sculpture (see Chapter 22). Compared to

Wright's more complex and articulated experimentation with abstract composition in the house of 1909 for Mrs Thomas Gale or the Coonley Playhouse of 1912, there remains, nevertheless, a distinctly negative quality about all Loos's work. He seems to have been principally concerned to clear away inherited tradition in order to lay the foundations of an immanent new architecture. That new architecture, however, he himself was never able to bring fully into being, although others did so under his influence by the time he was in his early fifties (see Chapter 22).

In Loos's larger urban work, such as the prominent Goldman & Salatsch Building of 1910 in the Michaelerplatz in Vienna, he was ready to use marble externally and even to include classically detailed columns. But in the ground storey of this store he increased the articulated space effects characteristic of the interiors of his flats and houses to almost monumental scale. Here, in the small Kärntner Bar of 1907, and in the Café Capua of 1913, both also in Vienna, his use of fine materials with their polished surfaces uninterrupted by mouldings would eventually prove as potent an inspiration to architects of the next generation as did his more ascetic written doctrine.

The Café Capua is gone; the Goldman & Salatsch interior drastically remodelled; but the Kärntner Bar, in the Kärntner Durchgang behind 10 Kärntnerstrasse, remains a small masterpiece of modern design. During the Nazi occupation the façade lost the American flag in stained glass which ran across the top, but the exterior was never of much interest in any case. The interior is fortunately completely intact (Plate 151). Skilful use of mirrors quite disguises its very small dimensions. Above smooth dark mahogany walls, set like screens between plain green marble piers, unframed panels of mirror that reach to the ceiling allow one to see the strong reticulated pattern of the yellow marble ceiling extending left and right and to the rear just as if the actual area of the bar were merely an enclave in a much larger space. Because of the particular height of the mahogany wainscoating this illusion is quite perfect, for one sees only about as great a space reflected on either side as that one is actually in; if the mirrors came lower, a greater extension on either side and at the rear would be suggested than could possibly be plausible as a reflection. A continuous grille of square panels filled with translucent yellow onyx takes the place of the mirror panel across the top of the front wall. Not until Mies van der Rohe's Barcelona Pavilion of 1929 was marble used again by a modern architect with such assurance (Plate 165A).

It was not these urban commissions, however, but Loos's free-standing houses that the next generation of architects studied most closely. For example, Loos's sort of domestic open planning, not Wright's, was probably the major influence on the Continent after the First World War. Moreover, the neutrality, not to say the negativity, of the exteriors of his houses provided better even than Garnier's projects the raw material with which a positive sort of architectural design could be created by younger men in the early twenties. Loos's achievement before the First World War was largely in the domestic field; after the war most of his executed work still consisted of houses and shop interiors, although he made several extremely interesting projects for larger edifices and erected a large sugar refinery for the Rohrbacher Company in Czechoslovakia in 1919.

The Rufer house in Vienna of 1922 is a narrow three-storey block rather similar to Voysey's Forster house of 1891 at Bedford Park. This has a most interesting sort of open plan, with the dining-room on a higher level than the living room. Loos was also working in other countries now; for his reputation, though limited to the most advanced circles, was increasingly international. His most considerable production of this decade was the house he built in 1926 for the writer Tristan Tzara at 14 Avenue Junod in Paris, where Loos had settled four years earlier. In the Tzara house the interior is arranged somewhat like that of the Rufer house, with the dining room opening into the living room but on a higher level. The tall, rather blank front, slightly concave in plan, has a more positive character than those of most of his houses, because the two-storey void sunk into its centre provides a dominating architectonic feature.

Of still later work the Kuhner house of 1930 at Payerbach in the wooded hills near Vienna is the most original example. A two-storey hall, opening towards the view through a window-wall, occupies most of the interior, with the various other living spaces opening into it on the main floor and the bedrooms reached from a gallery above. Above the masonry base the house is externally of log-construction, chalet-like, with Tyrolean roofs of low pitch and wide-spreading eaves. This reversion to peasant materials, and even to peasant forms, was curiously premonitory of a direction modern architecture took in several countries in the thirties (see Chapter 23). Had Loos lived longer he might, like Wright in that decade, have returned to the centre of the stage. As it was, his major contribution antedated the First World War.

Perret, Wright, Behrens, and Loos: on the whole these are the four most important architects of the first modern generation, important both for their personal contribution and also for their decisive influence on later architecture. Outside the countries in which these men worked, notably in Holland and in Scandinavia, there were also architects of distinction belonging to this generation, but their achievement was more limited and their influence more local, at least before the First World War. Yet Holland, between 1910 and 1925, came closer than any other country to creating a modern style, or phase of style, that was universally accepted at home; the origins, moreover, go back to the nineties. There was, properly speaking, no prefatory Art Nouveau episode in Holland of any consequence in spite of a considerable activity in the decorative arts that was largely inspired by Indonesian crafts.

Hendrik Petrus Berlage (1856–1934), the leader of the national school, was considerably older than Perret, Wright, Behrens, or Loos, although much younger than Wagner. As in Wagner's case, his earliest work, dating from the eighties, is of a generically Renaissance character, though much less suave and academic. The influence of Cuijpers soon led him towards a medieval mode – not Gothic, however, but round-arched. Compared to *Rundbogenstil* work of the best period fifty years earlier, his round-arched buildings of the nineties are rather gawky, but not without originality in their ornamentation; above all, they are vigorously structural in their expression in a 'realistic' and, indeed, almost High Victorian way. However, the insurance company buildings in Amsterdam and The Hague that best illustrate this phase were later enlarged by him in a chaster mode, thereby losing much of their anachronistic flavour.

Berlage's major opportunity came with the competition for the design of the Amsterdam Exchange held in 1897. This competition he won with a project which seems rather Richardsonian [4] to European eyes, though he did not – apparently – know much about American work at that time. For this very extensive public edifice, built over the years 1898–1903, he used, not the stone of his insurance office across the Damrak of 1893, but the red bricks of his Hague insurance office, also of 1893, varied with a modicum of stone trim still quite crudely notched and chamfered. Inside, the principal interior has exposed metal principals above galleried walls of brick and stone. In Berlage's masculine vigour and defiant gracelessness of detailing one could hardly have a greater contrast to such another major public building, designed and built at almost precisely the same time, as Horta's Maison du Peuple in Brussels. But Horta's masterpiece concluded rather than opened his career as an architect of international importance; certainly it did not lead to the development of a national modern school in Belgium. At least for Holland, the Exchange was more seminal, even if it lacked the revolutionary character of Wright's houses of these years or Perret's block of flats in the Rue Franklin in Paris. A fairer comparison would be with Voysey's contemporary houses, the work of an architect who was by intention rather a 'reformer' than a drastic innovator, or with Martin Nyrop's Town Hall in Copenhagen begun five years earlier.

Berlage's near-Richardsonian mode of this period is still better illustrated in a smaller structure, that built for the Diamond Workers' Trade Union in the Henri Polak Laan in Amsterdam in 1899–1900 (Plate 150). In this, the organization of the windows into a sort of brick-mullioned screen and the less aggressive handling of the carved stone detail produces a façade not unworthy of comparison with Richardson's Sever Hall or Gaudí's Casa Güell (Plate 96B). It is notable, however, that it is work of the seventies and eighties in America and in Spain that comes to mind, not work of this date.

The Hotel American of 1898–1900 in the Leidse Plein in Amsterdam by Willem Kromhout (1864–1940) illustrates how boldly Berlage's line was taken by other local architects, and his relative originality even outrivalled. But the lead came in Kromhout's case not from Berlage, but from Cuijpers's nephew Eduard (1859–1927), a transitional figure whose work deserves more attention outside Holland than it has generally received. Kromhout's touch is lighter than Berlage's, as is also, to make a poor pun, the colour of his pale buff bricks, but his expression of structure is less 'real' and more frankly fantastic. In the detail of the exterior, and even more in the interiors, he was undoubtedly seeking to create a sort of Dutch alternative to the Art Nouveau, not curvilinear or naturalistically 'organic' but richly decorative in a semi-abstract way. The intention was worthy; the result, alas, is rather tawdry.

It was not in the design of sumptuous individual buildings but in low-cost housing and in city-planning that Berlage himself was most active in the next fifteen years. In 1908, for example, he prepared a plan for the extension of The Hague, and in 1915 a more ambitious one for Amsterdam. He had built his first blocks of flats in the Linnaeusstraat in Amsterdam in 1905. These are much less Romanesquoid than his earlier work but they are equally brusque as to the detailing. However, his architecture shortly grew much suaver. Berlage's finest work of any period, perhaps, is not in Holland but

in the City of London, Holland House of 1914 at 1–4 Bury Street, E.C. This has a reticulated façade of moulded terracotta members more Sullivanian than Richardsonian in its marked verticality (Plate 138B).

The influence of Berlage in Holland was by this time very great and the esteem in which he was held – at least as much for his doctrine of direct structural expression as for his executed work – by no means restricted to his own country, since his writings were published in Germany as well as in Holland.[5] Yet, to foreign eyes, the achievement of the new school that grew up under his inspiration in Amsterdam is considerably greater than his own. The work of this 'Amsterdam School' – for it was soon so called – which flourished particularly in the decade 1912–22 is at times very close to that of the German architects influenced by Expressionism in the early twenties; but it began much earlier and has a strongly autochthonous flavour.[6] German Expressionism never inspired a building more stridently angular than the Scheepvaarthuis that J. M. van der Meij (b. 1868), a pupil of Eduard Cuijpers, built to house dock offices on the Prins Hendrik Kade in Amsterdam in 1912–13. The most extreme example of the abandon with which twentieth-century Dutch architects set out on new paths, this opened the way for the housing work of van der Meij's assistants Michael de Klerk (1884–1923) and P. L. Kramer (b. 1881), both also pupils of Eduard Cuijpers, which represents internationally the greatest Dutch contribution to modern architecture. It will be evident that, as the master of these three men, Eduard Cuijpers has about as much right as Berlage to be considered the father of the Amsterdam School. Their work, moreover, has some analogies not only with German Expressionism but also with Wright's contemporary Baroque phase of 1914–24. However, the crystallization of de Klerk's personal style preceded the beginning of Wright's influence in Holland and, when that influence began during the years of the First World War, it operated in fact to temper the extravagances of the Amsterdam School.

Early buildings by de Klerk, such as the first Eigen Haard Estate housing blocks that were designed in 1913 and erected round the Spaandammerplantsoen on the west side of Amsterdam, have a quaintness that recalls English or American work of a generation earlier rather than van der Meij's aggressive angularity. They look almost as if they were especially fanciful projects of the Shingle Style that happened to be executed in brick instead of wood. But the elegant underscaled local brick is handled with extraordinary virtuosity, and the façades achieve a stage-set-like unreality in sharpest contrast to the often dreary matter-of-factness of low-cost housing produced in other countries in these same years. Although the first Eigen Haard blocks were, in planning and general organization, as straightforward as Berlage's, they have a warmer human touch such as architects elsewhere – Behrens, for example, or the Scandinavians – either missed entirely or attempted to attain by a parsimonious use of more or less 'traditional' detailing.

The extension of the Eigen Haard Estate along the Zaanstraat, begun in 1917, represents perhaps the peak of de Klerk's achievement (Plate 156B). Here the many curved wall elements bring out the special qualities of Dutch brickwork; and the rather heavy wooden window-frames, brought forward as in Hoffmann's Stoclet house to the wall-plane, give continuity to the plastic modelling of the façades. Highly imaginative, even

whimsical, features of detail, such as the barrel-like corner oriel, give an air of good humour, and even of the outright humorous, that is rare in any other architecture, ancient or modern; but these features are for the most part truly architectonic, not merely decorative. De Klerk's whimsy is never nightmarish, in the way Gaudí's can be, nor loud and aggressive like van der Meij's. His highly personal style can be considered a sort of *barocchino* of the early twentieth century.

The extreme point of de Klerk's invention is seen in the post office that occupies the apex of the later portion of the Eigen Haard Estate. This is like nothing so much as a child's toy enlarged to architectural scale in some contemporary setting for Diaghilev's Ballet Russe.[7] After this his work grew somewhat simpler and more orderly. Already the blocks he designed in 1920 for an area round the Henriette Ronnerplein in the De Dageraad Estate on the south-east side of Amsterdam are more regular and restrained; the plainest of all is the very long continuous range near by in the Amstellaan built in 1921–2.

Also in the De Dageraad Estate, in the portion that runs down both sides of the P. L. Takstraat, along the Burgemeester Tellegenstraat and into the Talmastraat, Kramer showed himself even more of a virtuoso in the handling of curved wall elements of brick – here brown and buff – than de Klerk (Plate 156A). Projected in 1918 and built in 1921–3, Kramer's scheme combined tall and very plastic features at the street intersections with notably straightforward three-storey ranges in between. Thus he produced an extensive urbanistic ensemble of great homogeneity of character, yet very considerable variety of visual interest, and with a quality of craftsmanship perhaps superior to de Klerk's. But by the time this was completed Kramer had become even more chastened than de Klerk in his last work in the Stalinlaan. In Kramer's Amsterdam West housing, begun in 1923, the façades are plain and flat with continuous bands of white-sashed windows. Thus these blocks are definitely related to the direction that modern architecture was taking in Holland as in France and Germany in these years at the hands of considerably younger men (see Chapter 22).

Kramer's De Bijenkorf department store of 1924–6 in the Grotemarktstraat in The Hague, however, still retains much of the plastic exuberance of his earlier housing blocks and is executed with a sumptuous range of fine materials. Kramer here employed at large scale the curved surfaces of brickwork characteristic of De Dageraad, with notable success. Many Amsterdam canal bridges of these years illustrate also his virtuosity at elaborate semi-abstract detail carried out with excellent craftsmanship in wrought iron and carved or artificial stone. Moreover, in the mid twenties the Amsterdam City Architect's office exploited with real success in various school and police buildings a manner closely approaching that of de Klerk and Kramer.

Unfashionable even in Holland for a quarter of a century, the work of the Amsterdam School merits that more sympathetic examination which the Art Nouveau has now begun to receive. At its best the work of de Klerk and Kramer between the mid teens and the mid twenties has survived better than all but the finest contemporary achievements of Wright and Perret, partly at least because it was so well built in the first place and has been so well maintained ever since. Without being, in the proper sense of the

word, Expressionist, it yet has close analogies with the Expressionist approach. It may be considered to stand in a relationship to the work of Höger and Poelzig in Germany somewhat comparable to that of Gaudí to the Art Nouveau of Brussels and Paris; for it is at once independent of outside influence and superior to the foreign work that it most closely parallels. But the Amsterdam School did not occupy the entire Dutch scene even in these, its best, years.

In no European country was the work of Frank Lloyd Wright studied earlier and with more enthusiasm than in Holland; Berlage was one of Wright's greatest admirers after his visit to America in 1911. The influence of Wright's work up to 1910, known through the Wasmuth publications, began to be evident in the later years of the First World War. Dirk Roosenburg (b. 1887), Jan Wils (b. 1891), J. J. Van Loghem (1882–1940), and several others were notably Wrightian in the early twenties; and the magazine *Wendingen*, edited by H. T. Wijdeveld (b. 1885), continued through the mid twenties to bring Wright's later buildings and his projects of those years to European attention, notably devoting to him a magnificent series of special issues in 1925 which constitute a document of signal importance for the study of his work of this period. The first German book on Wright after the Wasmuth publications did not appear until the next year, and the first in French only in 1928.

Wrightian ideas were readily accepted by many Dutch architects previously inspired chiefly by Berlage, not to speak of their influence on Berlage himself. Admiration for Wright's work undoubtedly played a real part in the rapid modulation of Dutch architecture towards greater severity and a more geometrical discipline in the twenties. But the major significance of the lively Dutch interest in the American lies in its effect on the development of a few younger men in these years. As in France and in Germany, from the early twenties on, a sharp dividing line separated the work of the leaders of the older and of the younger generations in Holland. The Amsterdam School architects continued for some time to be highly productive, and the work of several prominent men, notably J. F. Staal (1879–1940) and W. M. Dudok (b. 1884), was related to both camps. But by the time Berlage was engaged on the big concrete-framed Netherlands Insurance Company Building in The Hague in 1925–6 its very Wrightian character had just been superseded in the projects and the production of several younger architects by a still more ascetic mode parallel to that being adumbrated at this time by the new architects of France and Germany (see Chapter 22).

In the new building of the Scandinavian countries before and after the First World War admirers in other countries thought to recognize an originality and vitality comparable to that of contemporary Dutch work. As has already been remarked, it has since become evident that most of what was produced in these decades in Denmark and Sweden did not really differ very much from the work of 'traditionalists' elsewhere. Despite extremely elegant and often piquant stylization, comparable but superior to that of most German work in this period, continued maintenance of inherited principles of design and the general use of reminiscent detail sharply differentiated the characteristic production of the Scandinavians from that of the Dutch, and of course far more from that of Wright or Loos. What such men as Ragnar Östberg (1866–1945), and E. G. Asplund

(1885–1940) down to his sharp change of style in the late twenties, designed and built in Sweden or P. V. Jensen Klint (1853–1930) and Kay Fisker (b. 1893) – down to his parallel change of style – in Denmark was generally still rated 'modern' a generation ago; almost all of it may now be more properly classed with 'traditional' work in other countries. In quality, however, it often more than rivals all but the finest modern German, Austrian, and Dutch work of its day (see Chapter 24).

An exception to this statement as regards Sweden is the remarkable Engelbrecht Church of 1904–14 in Stockholm by L. I. Wahlmann (b. 1870), with its great parabolic arches and its vertically massed exterior dominated by a very tall and svelte tower; there much of the experimentalism of the nineties lived on. For its influence, this is possibly a more important twentieth-century church than Perret's at Le Raincy. An even more considerable exception is a large part of the prolific production of the Finnish architect Eliel Saarinen (1873–1950) both in the Old World and in the New. Saarinen was the leading architect of Finland down to the twenties; after his removal to the United States he was Wright's only rival of his own generation on the American scene, the careers of the early modern architects of the West Coast being by then in decline (see Chapter 19).

Saarinen's earliest work in partnership with Herman Gesellius (1874–1916) and A. E. Lindgren (1874–1929) dates from the nineties. In 1900 he designed the Finnish Pavilion at the Paris Exhibition; this offered a powerful, though rather cranky, statement of Nordic originality quite opposed to the Latin elegance of the contemporary Art Nouveau and not without kinship to Berlage's Amsterdam Exchange. At home important public commissions followed rapidly: the National Museum in Helsinki in 1902 and the Helsinki railway station, for which he won the competition in 1904. This large and complex structure, built over the years 1910–14, is Saarinen's principal early work. In size and in monumentality it rivals Bonatz's Stuttgart station and also the vast stations that 'traditional' architects in America were building at much the same time (see Chapter 24). But there is much less of 'tradition' here than at the Stuttgart or, *a fortiori*, in the American stations. The heaviness and the grandeur are more than a little Germanic so that the fairest comparison is with Stürzenacker's Karlsruhe station, on the whole more straightforward in design and certainly much more delicately detailed.

Saarinen's achievement in his homeland made him well known throughout Europe; as early as 1905 one of his principal works had been a country house, Molchow, in Brandenburg in Germany. The project that he entered in the Chicago Tribune Tower competition in 1922 brought him suddenly to American attention. Although a Gothic design by John Mead Howells (b. 1868) and Raymond Hood (1881–1934) won this competition and was executed [8] on Michigan Avenue, in 1923–5, Saarinen's project (which in any case received a financially generous second premium) had a tremendous *succès d'estime*, including the accolade of Sullivan himself. In retrospect the design appears almost as medievalizing as Howells & Hood's; but the elegance of the silhouette and the consistency of the detailing, stylized nearly to the point of absolute originality, had an enormous contemporary appeal.

By this time Americans were beginning to grow bored with the increasingly forced adaptation of familiar styles of the past to skyscraper design. Yet in 1922 they were hardly ready to recognize the positive qualities of the very plain reticulated tower, elaborated with certain minor Constructivist touches, that was proposed by Walter Gropius (b. 1883) and Adolf Meyer (Plate 158A). Today it is easy to recognize how close this came to reviving the Chicago tradition of the early skyscrapers, a tradition almost forgotten since the First World War, as also its great importance in the adumbration of a new architecture in the early twenties (see Chapter 22).

Saarinen, after settling in the United States in 1922, designed various other skyscrapers along the lines of his Chicago project, none of them built. However, other architects at once picked up his relatively novel ideas; and undoubtedly his ideas played an important part in turning American skyscraper architects away from their long-continued dependence on the styles of the past. Hood himself was not least affected, as his black and gold American Radiator Building [9] on West 40th Street in New York, completed in 1924 even before the Chicago Tribune Tower, soon made evident. In Detroit, near which city Saarinen settled, Albert Kahn's Fisher Building is even more Saarinenesque and quite unrelated to his contemporary factories.

Called to Bloomfield Hills, Mich., by the Booth publishing family, Saarinen's first work in America was the Cranbrook School for Boys, a very extensive group of buildings begun in 1925. Here an almost Swedish elegance of craftsmanship and a profusion of semi-traditional detail were combined in a somewhat whimsical manner rather recalling English work of forty or fifty years earlier. The girls' school near by, however, Kingswood, begun in 1929, is much simpler, with an almost Wrightian horizontality and crispness of expression.

When American building activity revived in the late thirties Saarinen continued to develop. From 1937 on his American-trained son Eero (b. 1911), destined later to be one of the leaders of post-war architecture in the United States, doubtless played some part in encouraging that bolder structural expression and increasing sparseness of ornamentation that characterizes his finest late works. These qualities are already very evident in the Kleinhans Music Hall in Buffalo, N.Y., of 1938; while the contrast between the straightforwardness of the Crow Island School in Winnetka, Ill., of 1939, on which the Chicago architect Dwight H. Perkins (1867–1941) and his partner Wills collaborated, and the quaintness and fussiness of the Cranbrook School is quite startling.

Most distinguished of all the late Saarinen works are his Tabernacle Church at Columbus, Ind., designed in 1940 and built in 1941–2, and the similar but smaller Christ Lutheran Church in Minneapolis that was built in 1949 just before his death (Plate 157B). Cool, clear, and rational, the distinguished handling of brickwork in these churches, the knowing control of light, and the careful ordering of space in the interiors remain exemplary. Their towers are more refined versions of Moser's on Sankt Antonius in Basel; yet the massing of their blocky external elements almost seems to belong to an earlier tradition, that of the English Victorian Gothic churches of the third quarter of the nineteenth century, whose reminiscent forms they wholly abjure, and with which neither of the Saarinens was probably familiar.

Of the first generation of modern architects only Wright remains alive. But while he continues in active production the story that the last four chapters have tried to tell cannot be concluded. It is a rich story and a complex one because the men of this generation were all great individualists and proud of it; their finest work, moreover, is that most deeply impregnated with their very diverse personalities. In most countries they had to fight a vigorous battle for the right to personal expression, a battle that they carried through to recognition against entrenched inertia, both professional and lay. Yet in general, the links of this generation with the later nineteenth century remained close, both in their dependence on handicraft and in their frequent tendency – least evident with Wright and Loos – to accept (up to a point) personal stylization of earlier architectural forms [10] as a substitute for that basic originality of which all were at their best quite capable.

Not since the late eighteenth century had there been any such wide international renewal of architectural aspiration. Just as then, a new generation would profit from the experiments of their elders, taking much from each, but rejecting much as well, in order to create a style – or at least a discipline – aiming at universality. By its essential principles, this discipline could not have the variety and the intensity of personal expression which gives such colour and life to the work of the older men. Just as in the early nineteenth century, however, the architects who succeeded the great originals have been far more able than they to work together. By joining their individual efforts the men of the next generation changed the character of almost all architectural production in a way that their elders were quite unable to do. Thus there has come into being an architecture more completely of its own century than any style-phase of the previous hundred years – up to the Art Nouveau at least – had ever been wholly of the nineteenth century.

CHAPTER 22

THE EARLY WORK OF THE SECOND GENERATION: WALTER GROPIUS, LE CORBUSIER, MIES VAN DER ROHE, AND J. J. P. OUD

THE project that Gropius and Meyer offered in the competition of 1922 for the Chicago Tribune Tower, unlike Saarinen's, attracted very little contemporary attention in America (Plate 158A). Such a stripped expression of skeleton construction had, up to that time in America, been seen only in factories and warehouses. Even in Chicago, moreover, the New York ideal of the shaped tower had quite replaced the Sullivanian slab as the favourite form for pretentious skyscrapers. Ten years later, however, when the first International Exhibition of Modern Architecture was held at the new Museum of Modern Art in New York it was evident that the kind of architecture represented by Gropius's project had become widely accepted in several European countries. By that date it was even possible to deduce from the executed work of Gropius and his chief European contemporaries, most of which was shown in the exhibition, the existence of a new style christened 'international'[1] by Alfred Barr, the Museum's director. Whether the new architecture that came into being in the twenties in Europe and has since spread throughout the western world should in fact be considered a style, or even a style-phase, remains a matter of controversy; but for some thirty years it has been readily distinguishable from what the older generation of modern architects produced.

In 1922 this new architecture really existed only in the form of projects. The most strikingly novel buildings actually built in the early twenties, those by William Marinus Dudok (b. 1884) in Holland and by Erich Mendelsohn[2] (1887–1953) in Germany, no longer belong to the realm of the earlier, pre-war modern architecture; yet the work of neither is by any means as indicative of the direction the newer architecture was taking in these formative years as is the Gropius Chicago Tribune project. Very shortly, however, both Dudok and Mendelsohn drew closer to the main current of development of this decade, although they continued to be, in varying degree, individualists rather than whole-hearted converts to the dominant architectural mode of their generation.

Dudok's work as City Architect of Hilversum, beginning with the Public Baths and the Dr H. Bavinck School in 1921, is remarkably simple and direct (Plate 157A). The abstract crispness and clarity of his compositions are very different from the whimsically curved surfaces of de Klerk's and Kramer's housing blocks (Plate 156, A and B). This rigidly geometrical organization of the forms reflects his earlier contact with the group of Dutch abstract artists known as *De Stijl*,[3] notably the painters Piet Mondriaan and Theo van Doesburg and the sculptor George Vantongerloo. But Dudok's continued emphasis on the fine quality of his brickwork, the massiveness of his characteristically interlocking blocks, and a certain basically decorative intention still link his buildings of the twenties at Hilversum with the ideals of the older generation. Dudok's

work of this period was certainly novel – and even modern in a very advanced way for the date – but it remained quite Dutch in its idiosyncrasies, not 'international'.

The plasticity of Mendelsohn's Einstein Tower, designed in 1919 and completed in 1921, at Neubabelsberg near Berlin (Plate 153B) seems at first sight not unrelated to that of Gaudí's hewn-stone Casa Milá in Barcelona of 1905–10 (Plate 137A). But it was originally intended to be executed in poured concrete – for technical reasons it is in fact mostly of brick rendered with cement – and what one might call the 'overtones' of the forms are more mechanistic than organic. Like Dudok, Mendelsohn had been influenced by a local school of painting. But the images he distorted according to the tenets of Expressionism came from the world of machines not, like Gaudí's, from the world of plants and animals. Mendelsohn's earlier war-time sketches [4] make this origin even more evident. The extreme point of this sort of abstract sculptural Expressionism [5] in the twenties is found in the work of no architect but in the mountainous cult edifice called the Goetheanum at Dornach in Switzerland, designed by the creator of anthroposophy Rudolf Steiner [6] and built in 1924–6.

Mendelsohn himself rejected this excessively plastic approach to architecture – an approach to which a reversion can be noted on the part of Le Corbusier in the last decade, incidentally (Plate 167) – even before the Einstein Tower was completed. The hat factory that he built at Luckenwalde in 1920–3 was in the direct line of descent from the industrial work Behrens and Poelzig had done before the First World War. This was rightly recognized as one of the signal productions of those crucial years of the early twenties when the concepts of the new architecture were first being tentatively realized in France and in Holland, and very shortly, of course in Germany. Dudok's buildings at Hilversum of the early twenties had a very considerable international influence; [7] Mendelsohn's Einstein Tower did not, at least not on architecture.[8] However, other work of his done in the next few years was much admired and also widely emulated, both in Germany and abroad, by the younger architects.

In spite of the importance in these years of the executed work of Dudok and of Mendelsohn, it was four other architects who had the most to do with determining the direction that architecture took from 1922 on. One was a Swiss then working in Paris, Charles-Édouard Jeanneret, known as Le Corbusier. At this time more painter than architect, Le Corbusier had earlier been an assistant of Perret's and had also worked briefly for Behrens and even for Josef Hoffmann. Another was a Dutchman, J. J. P. Oud. He had practised in association with Dudok at Leiden in 1912–13, and from 1917 was in much closer and more sympathetic contact with the artists of *De Stijl* than Dudok ever was, being an actual member of their small cohesive group. Two more were Germans, Walter Gropius and Ludwig Mies van der Rohe, both of whom had been Behrens's assistants, respectively for two and for three years.

Gropius, born in 1883, is the eldest of the four and older than Mendelsohn also; Le Corbusier and Mies were born in 1888; Oud in 1890. Gropius had begun to build as early as 1906, when he erected some plain brick workmen's houses in Pomerania even before he had finished his professional training at the Technische Hochschule in Munich. A leading professor in this school was Theodor Fischer, Bonatz's master, in whose office

Oud later spent a few months in 1911. After a year of travel in Spain, Italy, and Holland Gropius entered Behrens's office in 1908, remaining there till 1910. On leaving Behrens he designed in 1911, with Adolf Meyer, the Fagus Factory at Alfeld-an-der-Leine. He worked again in partnership with Meyer from after the First World War until the latter's death in 1925.

Directly as this Alfeld factory – it made shoe-lasts – follows from Behrens's work for the A.E.G., notably the front of the Turbine Factory of 1909, its architectural expression is much more advanced (Plate 158B). There the great window remained, for all its size, but a window; here, in the main three-storey block, the slightly projecting metal chassis rise unbroken over very wide areas bounded by narrow brick piers, and the storey levels are barely indicated by solid panels identical in treatment with the glazed sash above and below them. This arrangement of transparent and opaque elements identically handled may almost – but not quite – be considered to constitute a 'curtain-wall'.[9] The omission of piers at the corners, a structural novelty here, enormously enhances the effect of transparent volume as opposed to that of solid mass. In the organization of the various industrial elements of the complete plant that are associated with the glazed block there is neither symmetry, such as Behrens was only beginning to relinquish, nor yet asymmetry of the more casual and picturesque sort; instead a modular regularity controls the whole composition. This factory has long been recognized historically as one of the most important[10] buildings of the twentieth century.

Gropius's next building, the Hall of Machinery at the Werkbund Exhibition of 1914 in Cologne, was in some ways less advanced. The main façade of this was quite symmetrical; and in the articulation of the brick piers of the ground storey, in the heavily framed central entrance and, above all, in the projecting slab roofs of the raised corners there appears to have been some direct influence from the work of Wright, notably from his hotel of 1909 in Mason City, Iowa. (This was published in the Wasmuth book of 1910, where Gropius would almost certainly have seen it.) The glazed front of the principal storey, however, and especially the rounded glass stair-towers at the ends were not at all Wrightian; they carried still further the expression of architecture as transparent volume already evident in the Fagus Factory and approached very closely indeed the mature curtain-wall concept, although at a modest scale.

Mies remained with Behrens a year longer than Gropius, after having spent three earlier years with Bruno Paul[11] (1874–1954), a more conservative architect whose best work was done as a furniture designer. His independent career began in a much less spectacular fashion than that of Gropius. The Perls house of 1911 at Zehlendorf outside Berlin was as formally symmetrical as Behrens's houses at Hagen of 1908–9 and rather more Schinkelesque. The Urbig house of 1914 at Neubabelsberg was very correctly late-eighteenth-century in its detailing. His most important work of these years, however, was the project for the H. E. L. J. Kröller house in The Hague of 1912, intended to contain the large and famous Kröller-Müller Collection of modern paintings now at Otterloo. Of this a full-scale wood and canvas model was erected on the actual site, but it was never built. The formal though asymmetrical organization of the severe horizontal blocks, the incorporation of voids in the composition by means of loggias and

pilastrades, and the cold austerity of the refined detailing of the masonry all approach very closely such things by Schinkel as the Zivilkasino at Potsdam and Schloss Glienecke, even if the characteristic belvedere tower of the latter is significantly omitted. In many ways this project was as premonitory of later modern architecture as the Fagus Factory, although the latter, as an executed building, has properly received much more notice.[12] Both Gropius and Mies were involved in the First World War from 1914 to 1918, so that the next stage in their careers opened only in 1919.

Le Corbusier and Oud were neutral nationals, but their production of these early years, although less interrupted by the war, is not for the most part of much intrinsic interest. After two years with Perret in Paris Le Corbusier had spent six months in Behrens's office in 1910.[13] His first house,[14] built for his parents at La Chaux de Fond in Switzerland in 1913, is more closely related to Behrens's early houses in its plain white stucco walls and fairly restricted fenestration than it is to the work of Perret or to Behrens's A.E.G. factories of 1909–11. The plan is the most interesting feature: this provides a central living area out of which other more specialized rooms open to left and right through wide glazed doors, a scheme that seems to derive from Perret's planning, or perhaps that of Loos,[15] rather than from Wright's.

Le Corbusier's next significant work was a war-time project of 1914–15 for low-cost houses called Dom-ino. These seem to derive not from anything of Perret's or Behrens's but rather directly from the ones that Tony Garnier had proposed for his 'Cité Industrielle' as early 1901–4,[16] but they are still plainer, probably because of the concurrent influence of Loos. However, Le Corbusier's only important executed building of the War years, a large house of 1916 at La Chaux de Fond, is closer to Perret in its elaborate formality,[17] its much simplified academic detail, and its concrete-and-brick construction. The plan represents an advance over that of his parents' house, however, for the main living area here is carried up two storeys and lighted by a tall window-wall towards the garden. Of special significance also is the arrangement of all the flat roofs as usable terraces.

It was in the next year, 1917, that *De Stijl* was founded, and Oud as a member of the group came into the closest contact with the Dutch abstract painters and sculptors generally known as Neoplasticists.[18] In this year he built two villas by the seashore: one, Allegonda at Katwijk, designed in collaboration with the architect M. Kamerlingh Onnes; the other, De Vonk at Noordwijkerhout, with interiors decorated by the *De Stijl* painter and critic Theo van Doesburg. Oud had no direct contact with Behrens, unlike the other three men, but he was briefly with Fischer in Munich in 1911, as has been mentioned. However, his work down to this time had been essentially Berlagian: moreover, it was Berlage who evoked his interest in the work of Wright. Nevertheless, there is nothing Wrightian about these villas, but rather a Loos-like reduction of architecture to plain white stucco cubes. The interest of De Vonk is largely confined to the floors of bold geometric pattern executed in coloured tile by van Doesburg; Allegonda was much modified by Oud in 1927.

In 1918 Oud became City Architect of Rotterdam, where his brother occupied a prominent political position, and began work at once on the Spangen Housing Estate,

Blocks I and II being of that year, Blocks VIII and IX of the next. The Tuschendijken Estate followed in 1920. These housing blocks, even more than the seaside villas, are notable for their negative rather than their positive qualities. All the elaboration of form and detail of the Amsterdam School was put aside in favour of an ascetic regularity. But various projects of these years illustrate how boldly Oud was attempting, partly under the influence of his painter and sculptor friends, partly under that of Wright, to arrive at new formal concepts. Oud was not alone in these years in attempting to translate the ideals of *De Stijl* into architecture. Gerrit Rietveld (b. 1888), in a jewellery shop-front in Amsterdam built about 1923,[19] was probably the first fully to realize Neoplasticist concepts in three dimensions and at architectural scale.

In Paris in the first post-war years Le Corbusier was also closely involved with painters; indeed, he himself was then as much, or more, a painter as an architect, and he has never ceased painting since. With the French painter Amédée Ozenfant he had written a book on art, *Après le cubisme*, published in Paris in 1918; together they developed a post-Cubist sort of abstract painting, partly inspired by their friend Fernand Léger and partly by their interest in the simple shapes of everyday objects. This they called 'Purisme'. In support of their ideas about all the arts they began in 1920[20] to publish a review, *L'Esprit nouveau*, which continued to appear until 1925, the nursery years of the new architecture.

In succession to his Dom-ino system of multiple housing of 1914–15, Le Corbusier was developing at this time the Troyes system, using poured concrete, and also the Monol system with a reinforced-concrete skeleton deriving technically from the innovations of Perret. But the definitive formulation of his new ideals for architecture, focused as they were at this time on the sociological problem of the low-cost dwelling, lay a year or two ahead. Having no official position, he did not need, like Oud, to produce executed work in quantity before his own concepts matured. Gropius's earliest work, back in 1906, had been a low-cost housing scheme, as has been noted, and in 1911 he built another housing estate, at Wittenberg-an-der-Elbe. Economical housing was increasingly recognized as a social service for which architects ought to exploit to the utmost their technical abilities; from the first it offered a common challenge to the Dutchman, the Swiss-Parisian, and the German.

Like Oud and Le Corbusier, Gropius was closely involved with painters in the early post-war years. Appointed in 1919 head of the Art School in Weimar and also of the Arts and Crafts School there which Van de Velde had run before the War, he combined them and named the new school the Bauhaus.[21] Here teachers of painting and sculpture and architecture worked in closest association with teachers of the crafts in continuation and extension of the English Arts and Crafts ideals of the eighties and nineties. Soon this rather Viennese approach, brought to the Bauhaus by Adolph Itten, with its emphasis on handicraft, was revised by Gropius so that it might better fit an increasingly industrialized society. To his faculty Gropius brought such advanced painters as the German-American Lyonel Feininger in 1919 and in 1922 the Russian Wassily Kandinsky and the Swiss Paul Klee. Yet it was not their refined art but rather Expressionist painting and sculpture which still influenced the jagged War Monument that he erected in Weimar

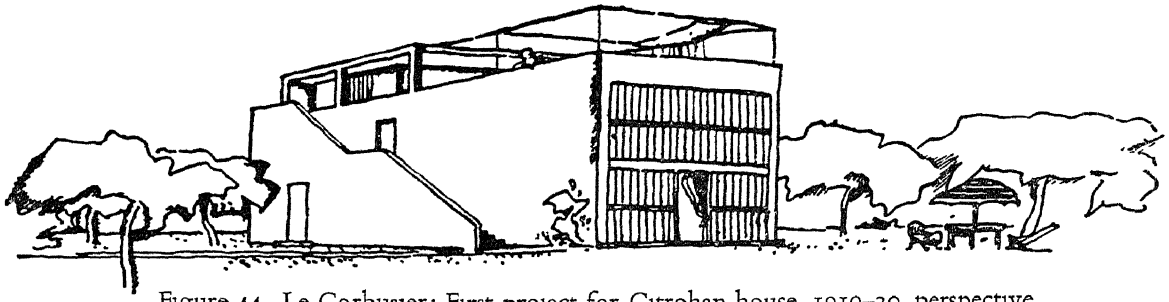


Figure 44. Le Corbusier: First project for Citrohan house, 1919–20, perspective

in 1921. His architectural ideals in the early post-war years before 1922, moreover, seem to have been rather closer to Poelzig's or Mendelsohn's than to those of Le Corbusier and Oud.

As has been several times stated already, certain remarkable projects best displayed the direction in which several of the architects of the younger generation were moving, along nearly parallel lines, in these years preceding the general revival of building production in the mid twenties. Gropius's Chicago Tribune project of 1922, in which the line of his development shifted away from Expressionism, has already been discussed out of sequence (Plate 158A). But the most significant projects, earlier than this by several years, were by Mies and by Le Corbusier. Mies's early work had not been very adventurous up to the time when he proposed, in 1919 and in 1920–1, two revolutionary glazed skyscrapers to be built in Berlin. In both, the floors were to be cantilevered out from central supporting cores and the curtain-walls enclosing them merely light metal chassis holding great panes of glass. However, their plans, respectively jagged and curvilinear, reflected the strong influence of Expressionism, an influence that disappeared from Mies's as from Gropius's work the very next year, after the Germans became aware of the architectural implications of Dutch Neoplasticism and also of Russian Constructivism. Van Doesburg,[22] it should be noted, visited the Bauhaus in 1922, and for a short but crucial period both Gropius and Mies seem to have drawn from Dutch sources as much inspiration as the young Dutch architects. In addition to the obvious debts of Dudok, Oud, and Rietveld to Neoplasticism, Cornelis van Eesteren (b. 1897), today City Architect of Amsterdam, was actually collaborating with van Doesburg in these years on various house projects.

Less striking than Mies's skyscrapers, but more buildable, were Le Corbusier's successive Citrohan projects for houses of 1919–22 (Plate 160A; Figures 44 and 45). Brought to public attention first in *L'Esprit nouveau* and later in his extremely influential book *Vers une architecture*, published in Paris in 1923 and shortly translated into English and German, these adumbrated a new aesthetic of architecture more completely than anything that he or any other architect had yet proposed on paper, much less built. Modest in size, each Citrohan house was to consist largely of a two-storey living-room fronted like that of the La Chaux de Fond house of 1916 with a tall window-wall. This would occupy most of the façade, and it was here set within a very plain frame of rendered concrete. The dining area was to be at the rear under a balcony from which the bedroom would open. Thus the section is similar to Wright's Millard house of 1923.

The earlier version of the house was intended to stand on the ground (Figure 44); in the later scheme the whole cube of the house was to be lifted up on *pilotis*, that is, free-standing piers of reinforced concrete constituting, Perret-like, essential parts of the structural skeleton (Plate 160A; Figure 45). Like Sullivan's piers at the base of the Guaranty Building of 1894–5 (Plate 119) the effect of these *pilotis*, allowing circumambient space to pass under the enclosed building above, was to enhance very strongly the look of volume as opposed to mass. This treatment, possible only with skeleton construction in ferro-concrete, steel, or wood, soon became one of the most significant formal devices differentiating the new architecture of the twenties from what preceded it. The later Citrohan project was thus the first of the 'boxes on stilts' against which Wright has continued to protest, although his own buildings have themselves tended more and more frequently to be lifted off the ground by one means or another.

If the structural methods employed here by Le Corbusier came from Perret, the external expression of his lifted box seems rather to derive from Garnier or Loos, although the rendered surfaces were evidently intended to be smoother and flatter than those of Loos's executed houses (Plate 155A) and the pattern of the windows much more regularly organized in the wall-plane. With the roof terrace on top surrounded by parapets continuous with the wall-planes below, even the earlier type is apprehended as volume rather than mass, especially as there were no deep window reveals to suggest thickness in the walls such as appear in Garnier's projects and Loos's executed work. By keeping the openings absolutely in the wall-plane, as Hoffmann had done on the Stoclet house, the very exact geometrical discipline of the design of the façades could be maintained even when seen in perspective. As a result, however, the structure was not expressed except in the *pilotis* of the later project. Yet the wide expanse of the window-wall at the front and the characteristic shape of the other windows, oblongs extended horizontally,[23] would obviously not have been practical but for the long spans made possible by the ferro-concrete skeleton.

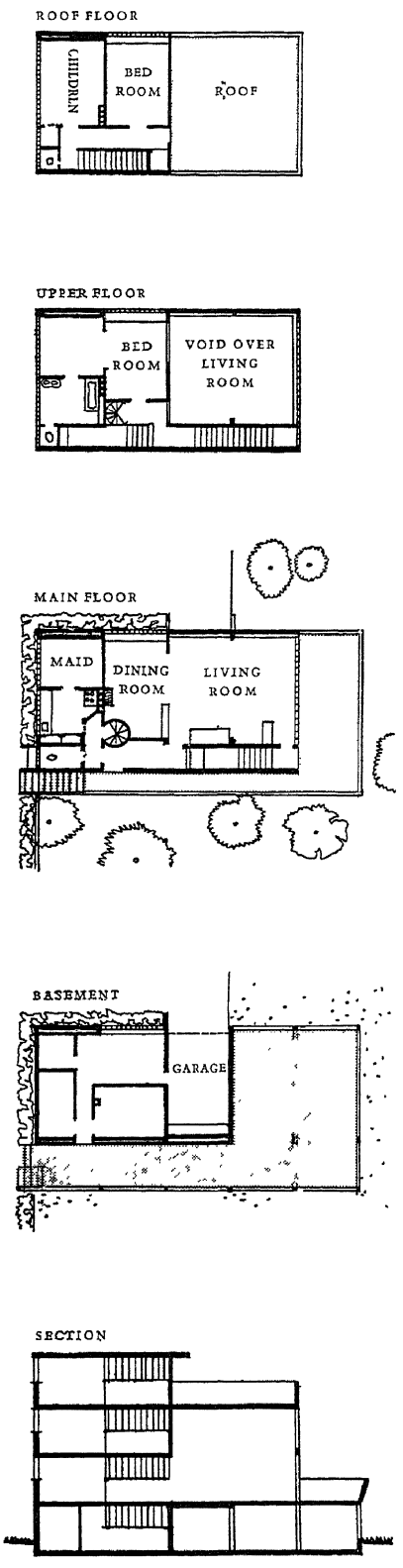


Figure 45. Le Corbusier: Second project for Citrohan house, 1922, plans and section

There was in the Citrohan projects no very close similarity to Le Corbusier's Purist pictures of these years other than the crisply geometrical ordering of the very flat façades and the untextured smoothness of their surfaces. However, the extreme mechanical precision and the more-than-Loosian rejection of the inessential clearly reflected an aesthetic parallel to that adumbrated in his paintings. Certainly the effect was – as Wright and others have often complained – likely to prove more pictorial than architectonic when such things were executed. There was no ornament such as Oud had, in some sense, obtained at Katwijk from his painter-collaborator van Doesburg; indeed, there was hardly any detail at all, at least as architectural detail was understood by Perret and Behrens. In this respect also Le Corbusier's new architecture was closest to the personal style of Loos.

Articles in *L'Esprit nouveau* and later the illustrations in *Vers une architecture* revealed the sources of Le Corbusier's extra-architectural inspiration and made such inspiration available to others who cared to look about them with his particular vision and his clearly defined ideals for the modern world. Works of engineering, American grain-elevators and the like; [24] the forms of things that move – ocean liners, motor cars and aeroplanes: [25] such things provided some of the visual prototypes for Le Corbusier's new aesthetic of architecture.[26] But there was also the social motive of developing a method of building houses to satisfy the needs of all classes. Moreover, Le Corbusier was already – to use a term introduced later – as much a 'planner' as an architect. In 1922 he prepared a project for a city of three million inhabitants. This proposed at the core a geometrically ordered group of widely spaced cruciform skyscrapers and, round the core, ranges of blocks of flats of moderate height, not arranged along narrow streets, but broadly distributed over a park-like terrain.

Le Corbusier had many years to wait before the world caught up with his ideas as a planner as these were promulgated in his book *Urbanisme*, published in Paris in 1925. But as an architect [27] he was shortly building in and near Paris a series of houses, most of them of considerably greater size than his Citrohan project. Moreover, in 1927, at the Werkbund Exhibition in Stuttgart, he finally brought that to execution also, although some minor modifications were incorporated. Le Corbusier's very first post-war houses – one at Vaucresson, S.-et-O., near Paris, which has been remodelled quite beyond recognition, and the house for Ozenfant at 53 Avenue Reille in the Montrouge district of Paris, both designed in 1922 and built in 1923 – were naturally not very adequate expressions of his ideals [28] (Figure 46). But, beginning with the contiguous La Roche and Jeanneret houses, designed originally in 1922 also and executed with many modifications and improvements in 1924 in the Square du Dr Blanche in the Auteuil district of Paris, and culminating in the Savoye house at Poissy, S.-et-O., of 1929–30 (Plate 159), the new aesthetic [29] of the Citrohan project was exploited with increasing virtuosity. Le Corbusier developed much further the spatial unity of his plans, usually keeping inside a defining rectangle but articulating that in various ways: at the Savoye house, for example, the main terrace is within the same raised box as the enclosed rooms (Figure 47). The treatment of the exteriors likewise grew simpler and more open. Horizontal windows were grouped and extended to form continuous ribbons all the

way across façades, and roofs at various levels, being completely flat, served as outdoor living-spaces. This is best seen at Les Terrasses (Plate 160B), the house built in 1927 for Michael Stein at 17 Rue du Professeur Pauchet in Garches, S.-et-O.

Different colours were often used on different walls to emphasize them as individual planes, particularly in interiors. Curved elements, such as were introduced earlier in the

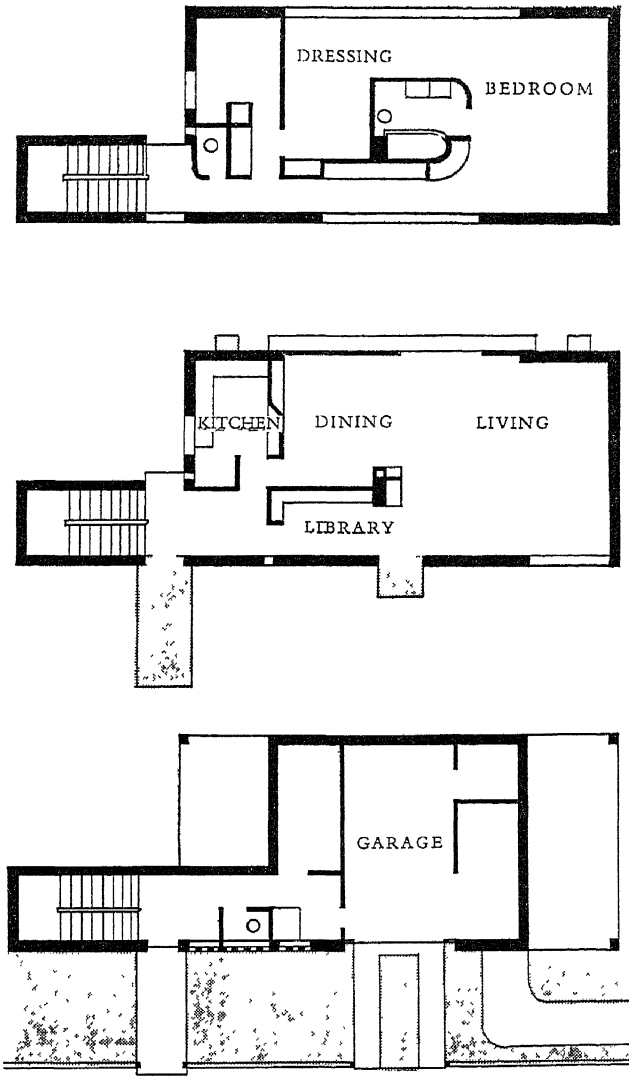


Figure 46. Le Corbusier: Vaucresson, S.-et-O., house, 1923, plans

plan of the Vaucresson house (Figure 46), appeared at the Savoye house in screens that rose around the upper roof-terrace (Plate 159). Moreover, the geometrical discipline of his *tracés regulateurs* based on the Golden Section was used with ever-increasing consistency.[30] At the same time the use of different colours and of curves produced, particularly at the Savoye house, a lyricism closely related to that of Purist paintings of the early twenties. This is curious, since in his paintings dating from the late twenties Le Corbusier was moving away from Purism, under the influence of Fernand Léger (and perhaps even of Surrealism), towards a looser and more connotative mode.

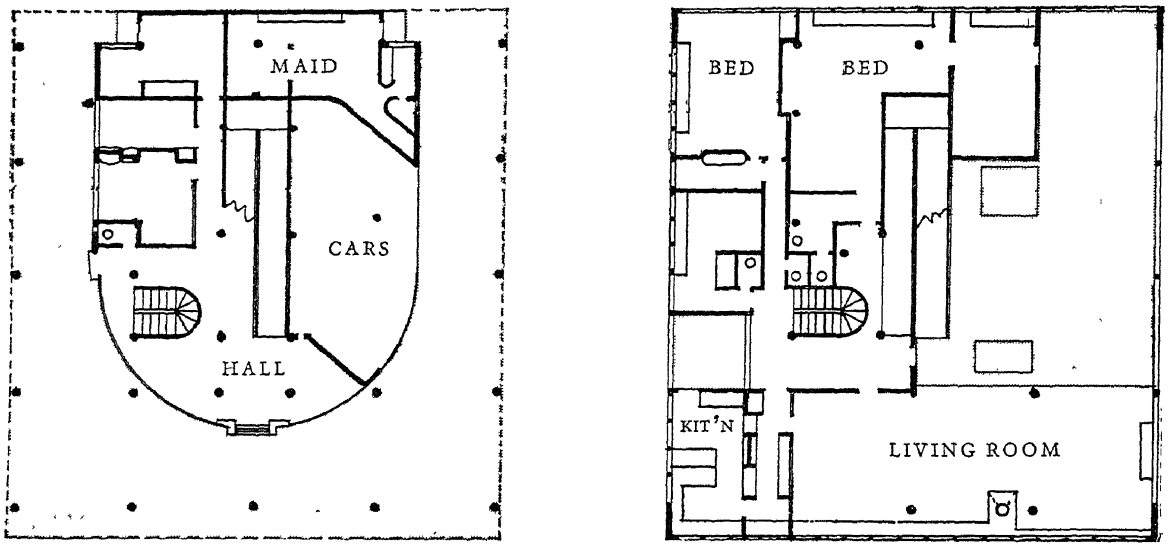


Figure 47. Le Corbusier: Poissy, S.-et-O., Savoye house, 1929–30, plan

Le Corbusier was not the only architect of the new generation building houses in Paris in these years. Beside his, those by the Belgian Robert Mallet-Stevens (b. 1886) [31] are at once cruder and more superficial in their design. In the Rue Mallet-Stevens near Le Corbusier's La Roche and Jeanneret houses, where he built several houses close together in 1926–7, he provided a somewhat depressing glimpse of the future, a glimpse which has often proved, alas, to be only too accurate a generation later. The Cité Seurat, on the other side of Paris near Le Corbusier's Ozenfant house, offered an even larger group of new houses of the same period, several of them of much higher quality. The Chana Orloff house there is by Perret; but most of the others are by André Lurçat [32] (b. 1892), an architect of much more integrity than Mallet-Stevens, if without Le Corbusier's genius. The best of Lurçat's houses, where they have been adequately maintained, possess certain common-sense virtues that Le Corbusier's lack; in the late twenties and early thirties they provided paradigms at least as popular as Le Corbusier's. His school of 1931 in Villejuif, Seine, has a special importance also, as it was in the field of school-building [33] that the new architecture first became widely accepted later in the thirties in several countries. Le Corbusier's activity was much greater than Lurçat's, however, and in one major project at least he extended the scope of the new architecture far beyond the realm of the modest private dwellings that he and Lurçat were so largely restricted to building in the twenties.

In 1925, in the Pavillon de l'Esprit Nouveau at the Paris Exposition des Arts Décoratifs, Le Corbusier had shown a dwelling unit of the Citrohan type arranged as a flat with a large terrace at one side, following an unexecuted project of 1922. The actual housing estate that he built at Pessac outside Bordeaux in 1925–6 was less successful, although by this time many young architects concerned with housing in other countries were finding inspiration in his work and perhaps even more in his ideas. But it was in an entirely

different realm that Le Corbusier had, like Saarinen in the Chicago Tribune competition, a failure which was nonetheless a tremendous *succès d'estime*. Le Corbusier's project for the Palace of the League of Nations [34] came very close to winning the competition of 1927. Moreover, the totally undistinguished scheme jointly produced by the elderly Frenchman P.-H. Nénot (1853–1934), who had built the new Sorbonne in Paris in 1884–9, and various other architects from several different countries eventually executed in Geneva never received the attention or the flattery of world-wide emulation and imitation which Le Corbusier's project did. This led, for example, to his selection to design the Centrosoyus in Moscow in 1928. Begun the following year, this was finally finished in 1936, but with most inadequate supervision. However, the Communist 'party line' [35] turned sharply against modern architecture in the early thirties, and no more projects by Western European architects were invited after the Palace of the Soviets competition held in 1931.

If Le Corbusier in the twenties was, by force of circumstances, almost more completely restricted to house-building than Wright had been in the preceding decades, Gropius's career in Germany developed very differently. In 1925 he was invited by the city of Dessau to come there from Weimar and re-establish the Bauhaus; in that year and the next he had a chance to build a very large and complex structure to house the school as well as his own and several other professors' houses. The houses were not notable additions to the new canon, although they were soon as much imitated as Le Corbusier's and Lurçat's. However, the Bauhaus building itself was the first major example of the new architecture to be executed, illustrating on a large scale most of its possibilities and principal themes, none of them by this date altogether novel.

The most striking element of the Bauhaus is the studio block, a four-storeyed glass box (Plate 161A). This carried to its logical limit the implications of the near-curtain-wall of the Fagus Factory, quite as Mies had already proposed for his two glass skyscraper projects, but without their Expressionist planning. The bridge to the left of this block exploits the possibilities of great spans in ferro-concrete construction. Throughout that section and the block on the left ribbon-windows longer than Le Corbusier's at Les Terrasses open up the walls just as Mies had already proposed to do in a notable project of 1922 for a ferro-concrete office building. A lower refectory wing links the glazed block with an apartment tower at the rear; in that the grouping of the horizontal windows with the many little projecting balconies clearly expresses the fact that this portion of the building is made up of small repeated dwelling units.

The organization of this very complex structure is asymmetrical but carefully studied (Figure 48). Where Le Corbusier had thus far composed most of his houses inside a single 'box', Gropius here combined four or more. In each he emphasized visually the fact that the surface was but a thin shell enclosing an internal volume, but he varied the treatment according to the internal use of each portion of the building. At the same time regularity of rhythm, and often identity of measure in the parts, ordered the whole without recourse to symmetry or to the imposition of any such special system of proportion as Le Corbusier was enthusiastically developing.

Gropius did not again, until late in life in America, have such another architectural opportunity. In the following years, down to his departure from Germany with the rise of Hitler, his production was almost entirely in the field of low-cost housing. There he had the large-scale responsibilities largely denied to Le Corbusier until after the Second World War, but common enough by then in Germany.[36] First, in 1926–8, came the Törten Estate at Dessau consisting of terrace houses of concrete with smoothly rendered walls and horizontal windows. These are sound and economical but somewhat dull in design, the very reverse of Le Corbusier's at Pessac. At the Werkbund Exhibition of 1927 also, Gropius's free-standing houses did not rival Le Corbusier's in quality of design, despite their considerable technical importance as early examples of something approaching total prefabrication.

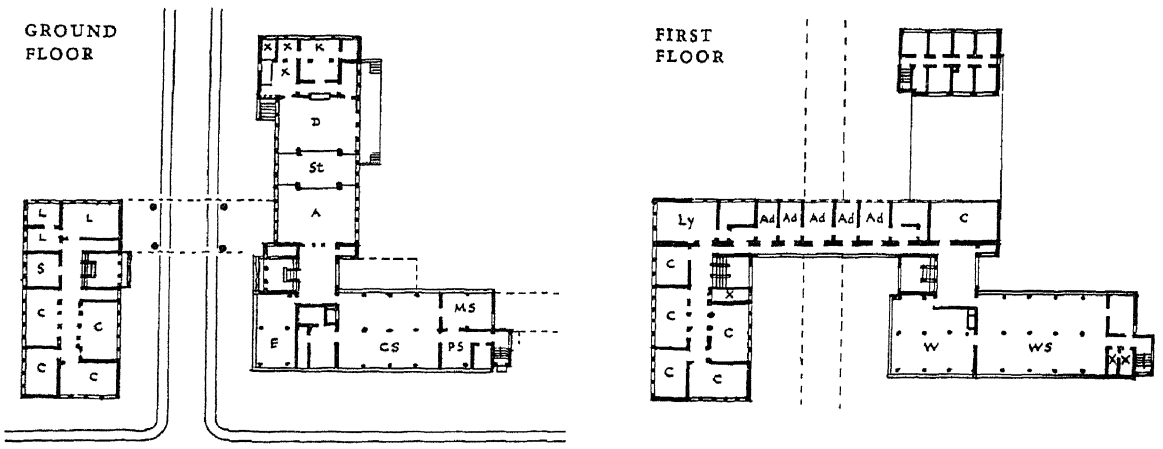


Figure 48. Walter Gropius: Dessau, Bauhaus, 1925–6, plans

A	Auditorium	D	Dining	Ly	Library	St	Stage
Ad	Administration	E	Exhibitions	MS	Machine Shop	W	Workshops
C	Classroom	K	Kitchen	PS	Paint Shop	WS	Weaving Shops
CS	Carpentry Shop	L	Laboratory	S	Store	X	Cloaks

Gropius's most finished works of the twenties were all at Dessau. Besides the Bauhaus itself, there is a small block of flats rising at the end of a row of one-storey shops to form the centre of the Törten Estate of 1928. But even more notable is the Dessau City Employment Office, begun the year before. Here Gropius rejected stucco rendering,[37] hitherto almost as much the sign manual of the new architecture in Germany as in France, and surfaced his walls with brick (Plate 161B). The horizontal strips of window in the office wing, carefully related to the narrow bands of wall between and elegantly subdivided by light metal sash, are balanced with bold assurance against the tall vertical light of the stair tower at one end. Whether Gropius had learned from the Neoplasticists or the Constructivists, by this time he had become a master of abstract architectural composition in his own right.

Leaving the Bauhaus in 1928, Gropius next undertook a large housing estate, Dammerstock, at Karlsruhe. Here he combined terrace houses, somewhat ampler in size and less mechanically designed than those at Törten, with ranges of six-storey blocks of

flats in the form of long, rigidly orientated slabs. Following this came the Siemensstadt Estate of 1930 outside Berlin (Plate 162A). This is the classic example of housing in tall, thin slabs, prototype of innumerable similar estates to be built throughout the western world before and after the Second World War. In Germany, however, where the form was first adumbrated, their production ceased in 1933 with the onset of the Hitler regime – it has since been revived very actively, particularly by Ernst May at Hamburg and by architects of several countries in the Interbau exhibition of 1957 in Berlin.

Mies in the twenties was not nearly so prolific as Gropius, nor was he so widely influential. His Wolf house of 1926 at Guben and the Lange and Esters houses at Krefeld of 1926 and 1928, despite the superb quality of the brickwork [38] and the careful study of the placing and the shapes of the large horizontal windows, did not redeem the promise of a project which he had made in 1922 for a country house; that was comparable

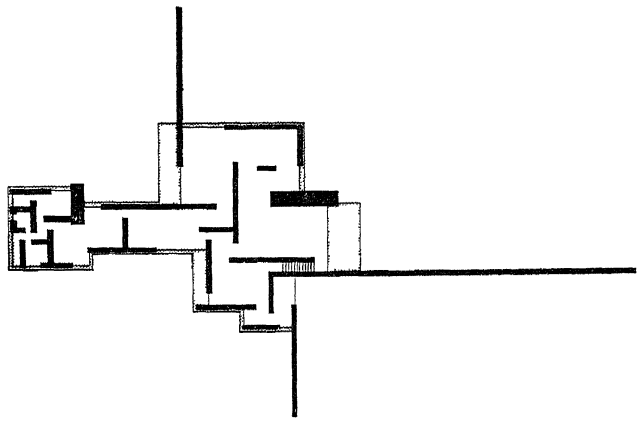


Figure 49. Ludwig Mies van der Rohe: Project for brick country house, 1922, plan

in significance to his skyscraper schemes of the preceding years. Its plan seemed to represent the extension upward of a complex, but very rigid, geometrical pattern like those seen in Mondriaan's and van Doesburg's paintings of this period (Figure 49). This sort of planning allowed a continuous flow of space in and around internal partitioning elements and also out through wall-high glass areas to the surrounding terraces, themselves defined by the extension of the masonry walls of the house. This openness more than rivalled, and was probably influenced by, the spatial flow in the Prairie Houses of Wright. Neoplasticist influence continued strong in Mies's work as late as his Liebknecht-Luxemburg Monument in Berlin of 1926. This was an abstract rectangular block, ingeniously composed of various brick surfaces arranged in different planes. (It was, of course, destroyed under Hitler.)

The flats that Mies built in the Afrikanische Strasse in Berlin in 1924–5 were more in line with Gropius's and Le Corbusier's contemporary work than his private houses. Moreover, his block of flats (Plate 162B) at the Werkbund Exhibition of 1927 on the Weissenhof at Stuttgart, of which he was the general director, with its lines of broad window-bands broken occasionally by vertical stair-windows, had an elasticity of

planning and a clarity and subtlety of expression much superior to Gropius's taller and longer slabs at Dammerstock and Siemensstadt.

In 1929 came Mies's masterpiece, one of the few buildings by which the twentieth century might wish to be measured against the great ages of the past (Plate 165A). The German Pavilion at the Barcelona Exhibition, although built of permanent materials – steel, glass, marble, and travertine – was, like most exhibition buildings, only temporary. But few structures have come to be so widely known after their demolition, or so intensely admired through reproductions, except perhaps Paxton's Crystal Palace. Set on a raised travertine base almost like a Greek stylobate, in which lies an oblong reflecting pool, the space within the pavilion was defined by no bounding walls at all but solely by the rectangle of its thin roof-slab. This was supported, almost immaterially, on a few

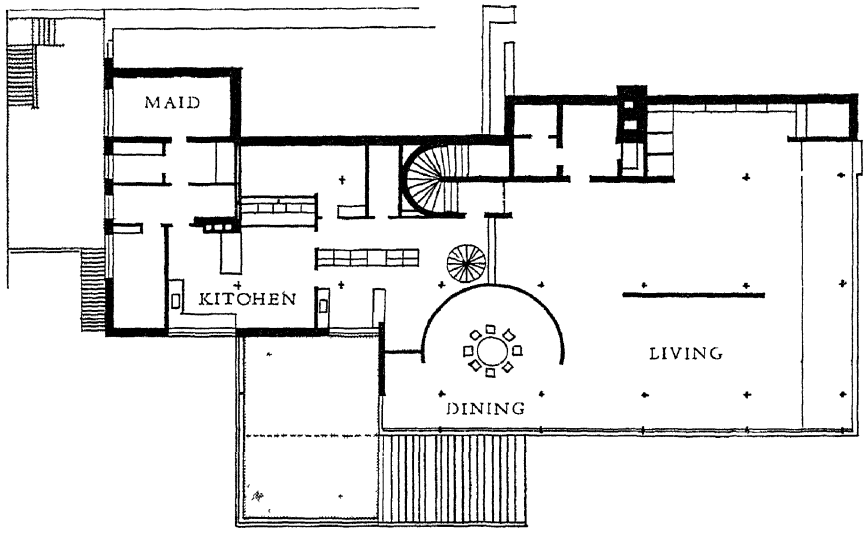


Figure 50. Ludwig Mies van der Rohe: Brno, Tugendhat house, 1930, plan

regularly spaced metal members of delicate cruciform section sheathed in chromium. The covered area was subdivided, rather in the manner of the project of 1922 for a brick country house, by tall plate-glass panels carried in light metal chassis, some transparent, some opaque, and also by screens of highly polished marble standing apart from the metal supports. The disposition of these screens is asymmetrical but exquisitely ordered; yet it has none of that Neoplasticist complexity evident in the placing of the partitioning elements in the project of 1922. As a result, the articulated space of the pavilion has a classic serenity quite unlike the more dynamically flowing interiors of Wright's houses. At the Berlin Building Exhibition in 1931 Mies repeated the Barcelona Pavilion in less sumptuous materials, making only slight changes in the plan so that it might provide a model for a house.

More than a little of the special quality of space-distribution in this exhibit Mies had been able to achieve already in the Tugendhat house of 1930 at Brno in Czechoslovakia. There also the screens that subdivide the unified living-space are quite separate from the delicate cruciform metal supports (Figure 50). One of them, made of macassar

ebony, partially encloses the dining-area and is semicircular in plan, thus notably enriching the general spatial effect. Externally this house is less remarkable. At the upper, or entrance, level towards the street it is quite closed in and even rather forbidding; but at the rear towards the garden there is a continuous, room-high glass wall framed by stucco bands above and below. At one end an open terrace is included within the rectangle of the plan, and from this a broad flight of stone stairs descends to the ground. The contrast with the somewhat similar rear of Le Corbusier's Les Terrasses expresses well the considerable range of different effects possible within the tight limits of the new architecture even in this, its most rigidly doctrinaire period of the late twenties.

Within the twenties, both in France and in Germany, the new architecture received its full formulation, first in projects and shortly afterwards in executed work. At the same time Le Corbusier and Gropius provided in articles and in books the arguments in its defence.[39] Both are extremely articulate men, the one with the emotional intensity of a poet or a preacher, the other with the cool logic of a scientist or a professor. They soon found excited readers and later devoted followers all over the western world as their writings were exported, translated,[40] and paraphrased; but the significant activity of this period was by no means only French and German. Despite the continuing vitality of the Amsterdam School through the mid twenties, the new Dutch school associated with Rotterdam rose rapidly in national and international significance. Oud,[41] indeed, brought the new architecture to maturity in Holland in precisely the same years as Le Corbusier and their German contemporaries; Rietveld and several others made signal contributions also.

The Oud Mathenesse housing estate at Rotterdam, which Oud undertook in 1922, is rather different from Spangen and Tuschendijken. At first sight it may appear more conservative, since it consists of small terrace houses with visible tiled roofs rather than tall blocks of flats. But rendered and painted walls replaced the brick of the earlier Rotterdam work, recalling the Loos-like treatment of his seaside villas as also the rather Wrightian projects he had designed in the intervening years. Moreover, the shapes and subdivisions of the windows were very carefully considered, so that the general effect is quite similar to the most advanced projects of Le Corbusier and of Mies designed in this same year. The influence of the *De Stijl* artists may not be very apparent in the façades of the houses and shops; but in the temporary building superintendent's office that Oud built here in 1923 cubical wooden elements painted in primary colours produced a composition quite like a Neoplasticist painting developed in three dimensions. It should be noted, however, that this was not, like Dudok's work of the period, at all related to the very complex Neoplasticist sculpture of Vantongerloo. Oud's façade of 1925 for the Café de Unie in Rotterdam, being two-dimensional, was even more like a Mondriaan painting raised to architectural scale.

It has already been mentioned that in 1923 van Doesburg was engaged in collaboration with van Eesteren on some remarkable studies, half abstract paintings, half architectural isometrics. Rietveld, in the Schroeder house of 1924 in Utrecht (Plate 164B), boldly carried such a hypothetical Neoplasticist architecture of discrete planes and structural lines into the world of reality even more completely than in his earlier shop in Amsterdam.

By this time, however, Oud had learned all that Neoplasticism had to offer him. He was in any case now personally closer to Mondriaan than to van Doesburg, and Mondriaan had left Holland for Paris. In Oud's first really mature work, which remains also his masterpiece, two terraces with shops at their ends built at the Hook of Holland in 1926–7 but designed a year or two earlier, all overt emulation of contemporary painting disappeared, except for the restriction of colour to white-painted rendering with only small touches of the primaries on some of the minor elements of wood and metal (Plate 163B). The serenity of these smooth façades with their long regular ranges of horizontal windows, the extreme refinement of the detailing of the fences and the doorways, and, above all, the lyricism of the rounded shops, their walls all of glass under a cantilevered slab bent down at the ends, were unequalled by anything Le Corbusier or Gropius or Mies had yet built. Reputedly it was the influence of Van de Velde that led Oud to introduce curves here, much to the disgust of the Neoplasticists.

Oud's terrace-houses in the 1927 exhibition at Stuttgart were equally exemplary in their perfection of finish but slightly less interesting in their over-all design. Those by a still younger Dutch architect, Mart Stam, were perhaps superior. Then there followed Oud's very large Kiefhoek housing project at Rotterdam which was built in 1928–30. Here the windows of the upper storey of each terrace became a continuous band, but something of the earlier refinement was lost just as in Gropius's Siemensstadt blocks of the same period.

At Kiefhoek Oud was called on to provide a church as well as housing. Its vices as well as its virtues epitomize very well the state of the new architecture at the end of the decade (Plate 164A). Considered as elements in an abstract composition, the handling of the subordinate features of the Kiefhoek church is masterly, refining and – as it were – domesticating various adjuncts of an almost industrial order such as had earlier provided a good part of the varied visual interest of Gropius's Fagus Factory. But the main auditorium block is so box-like that it holds its place among the rows of houses only by its size, offering no expression whatsoever of its special purpose – it could as easily be a garage. A far more notable exemplar of the new architecture, still about the finest twentieth-century building in Holland, is the van Nelle Factory outside Rotterdam built in 1927–8 by the firm of J. A. Brinkman and L. C. van der Vlugt (b. 1894) but probably designed by Stam (Plate 163A). The Dutch firm of B. Bijvoet and Johannes Duiker (1890–1935) should also at least be mentioned here for their admirable work of the twenties.

The conditions of the twenties – or more precisely the particular conditions under which the new architects had to work and, to a large extent, even seemed satisfied to work – restricted their scope rather considerably. In France the usual clients, often American rather than French, sought houses that were *avantgarde* and related ideologically to the painting of the Cubists and Post-Cubists. Towards the utilitarian field of low-cost housing the new architects everywhere felt a special responsibility; in Germany and Holland they readily found major opportunities for official employment at such work. Their intense concern with the aesthetic potentialities of engineering gave them a special sympathy for industrial building, but major opportunities such as the van Nelle

Factory were very rare. Gropius's Bauhaus, a large and complex structure serving a cultural purpose, and the Barcelona Pavilion, an edifice with almost no other purpose than to be beautiful, were important exceptions in a range of production characterized by a surprising international consistency of type as well as of character.

Yet the hands of the various individual architects are, in fact, never difficult to distinguish and, from this time onwards, the paths of the four early leaders began definitely to diverge. It was chiefly the work of late-comers, of whom there were in the twenties large numbers only in Germany, that tended towards monotony and anonymity. Not since the early years of the nineteenth century, when Romantic Classicism at the hands of a second generation reached a comparable clarity of stylistic definition, had there been such a rigid and humbly accepted architectural discipline. However, certain men, such as Mendelsohn and Dudok, retained in their practice of the new architecture strong traces of earlier idiosyncrasies. Much of their work lacks therefore the purity and the assured mastery of the four initiators. But Mendelsohn's Schocken Department Stores, built in several German cities in the late twenties – at Nuremberg and Stuttgart in 1926–7, at Chemnitz in 1928 – and his Petersdorf Store at Breslau in 1927 are certainly superior in interest and in vitality to the new city houses and suburban villas in France; not to speak of the housing estates in Germany that were being produced in such considerable quantity by the end of the decade by architects who were literalistic adherents of the new architecture. The work of such designers showed all the naive enthusiasm, the subjection to discipline, and the doctrinaire characteristics of the activity of new converts in any field.

But when, in his Columbus Haus of 1929–31 in Berlin, Mendelsohn finally accepted a comparable discipline he was able to retain most of his earlier vitality. Here he produced a really paradigmatic commercial building – almost a small skyscraper – such as none of the four leaders ever had the opportunity of carrying to execution in the twenties. Much the same can be said for a considerably later 'baby skyscraper', Dudok's Erasmus Huis of 1939–40 in the Coolsingel in Rotterdam. This is still, after the van Nelle Factory, one of the best buildings in Rotterdam, despite all the post-war reconstruction there (see Chapter 25).

As the new architecture spread to other countries around 1930 it was naturally the lowest common denominator of its potentialities that became most widely evident. However, at just this point an international depression supervened; the building boom, with which the rise of the new architecture had been at best but coincidentally associated, soon ground to a standstill. In Germany in the early thirties, moreover, as also in Russia and considerably later and less rigidly in Italy, an authoritarian regime proscribed the new architecture. Leaders like Gropius, Mies, and Mendelsohn left the country and the new architecture was in abeyance there until after Hitler's fall.

CHAPTER 23

LATER WORK OF THE LEADERS OF THE SECOND GENERATION

HISTORIANS, whether of politics or the arts, should ideally stand at some distance from their subjects thanks to remoteness in time; in lieu of that, remoteness in space sometimes serves the same purpose. However, this historian has now reached the point at which he entered the scene; he must write, as statesmen who write history are often forced to do, of events concerning which he has first-hand knowledge – and hence, alas, first-hand prejudices. Architects, the real actors in architectural history, often write as well as build; since Vitruvius there have been many whose fame depends as much on their books as on their buildings, not least several of the men with whom Part Three of this book has dealt. But those who write about architecture as historians and critics without being active builders, who merely explain, select, and illustrate the significant work of their own day or even of the past – particularly the immediate past – are to some extent minor actors on the scene also. They cannot, therefore, be merely neutral observers, reporting without *parti pris* the ideas and the achievements of others, however hard they may try to maintain their objectivity.

To have written the only monograph on Wright to appear in French, to have provided the first account in English of the new architecture, to have published a book on the work of Oud in the late twenties, modest as these contributions were, are all actions indicating an early commitment on the part of this author. The preparation in 1931 with Philip Johnson of the first International Exhibition of Modern Architecture, held at the Museum of Modern Art in 1932, in which Le Corbusier, Gropius, Oud, and Mies were signalized as the leaders of the new architecture, and the publication – also with Philip Johnson – of the book called *The International Style* [1] at that time were even more definite and controversial acts of participation in the dialectic of architectural development in this century.

If it seems necessary to mention these publications here and not merely to refer to them in the Notes or list them in the Bibliography, it is in no spirit of boastfulness but rather of apology. From this point on the ideal objectivity of the historian, attempting disinterestedly to piece the past together from a study of its extant monuments and from relevant contemporary documents, is inevitably coloured, if not cancelled out, by the subjectivity of the critic writing of events he knew at first hand. Concerning them, of course, his present opinions have no more real historical validity than those he held and published nearer the time when the events occurred. With this proviso the canvas may now be somewhat broadened.

By the early thirties the new architecture was by no means restricted to France, Germany, and Holland, the countries where it had originated. Yet, with the possible exception of Alvar Aalto (b. 1898) in Finland, no other leader of the calibre of the early four

had appeared up to that time. The building of 1928–9 at Turku for the newspaper *Turun Sanomat* was Aalto's first mature work to be completed. In this the plastic handling of the concrete piers [2] in the interior introduced a new and personal note of architectural expression in a frankly industrial setting. His Tuberculosis Sanatorium at Paimio of 1929–33 rivalled the Bauhaus in size, if not perhaps in complexity, and was almost the first [3] major demonstration of the special applicability of the new architecture to hospitals. The City Library at Viipuri, designed as early as 1927 but not finished until 1935, was a more original example of the new architecture. In particular, the lecture hall there, with its acoustic ceiling of irregularly wavy section made up of strips of wood, was strikingly novel.

In the United States the Lovell house in Los Angeles opened in 1929 the American career of Richard J. Neutra (b. 1892), an Austrian who had worked briefly with Wright. In this house, with its cantilevers, its broad areas of glass, and its volumetric composition, Neutra showed the completeness with which he had already rejected the broad Wrightian road and accepted the more restricted aspirations of the newer architecture of Europe. Never, perhaps, have Wright's ideals and those of the next generation appeared so sharply opposed as at just this time, moreover. But Neutra's mature work began only considerably later than this.

In 1930–2 the tallest of all skyscrapers, the Empire State Building by Shreve, Lamb & Harmon, was rising in New York; this was a shaped tower in the local tradition although devoid of reminiscent stylistic detail. In these same years, however, a well-established 'traditional' architect, George Howe (1886–1954),[4] in association with a Swiss, William E. Lescaze (b. 1896), who had been a pupil of Karl Moser, returned to the Sullivanian slab in designing the Philadelphia Savings Fund Society Building (Plate 169). Moreover, they treated their slab along the lines that the leading European exponents of the new architecture had adumbrated in the previous ten years. It would be a score of years before other skyscrapers of such significant and distinguished design were built in American cities (see Chapter 25).

In Sweden E. G. Asplund (1885–1940), whose architecture had hitherto been of a 'Neo-Neo-Classic' order, extremely crisp and refined but definitely reminiscent,[5] turned to the new architecture of Le Corbusier and Gropius just before he completed the Central Library of Stockholm (Plate 176A), a building first projected in 1921 but not opened until 1928 (see Chapter 24). For the Stockholm Exhibition of 1930, of which he had entire charge, Asplund was soon designing an extensive and elegantly varied range of pavilions that exploited to the full the possibilities of the new architecture. In Denmark Kay Fisker (b. 1893) underwent a somewhat less drastic conversion at much the same time.

These years also saw the beginning of the English career of Berthold Lubetkin [6] (b. 1901), a Russian who had settled in England in 1930 after working for some time in France. His early Gorilla House at the Regent's Park Zoo in London was soon outshone by the smaller, but much more remarkable, Penguin Pool there of 1933–5, which is almost a piece of Constructivist sculpture (Plate 172B). In 1933–5 also, the tall block of middle-class flats, Highpoint I at Highgate outside London, was erected by the

Tecton group, of which Lubetkin was the leading spirit. With its fine hill-top site overlooking Hampstead Heath, this cruciform tower rivalled Le Corbusier's Clarté block in Geneva of 1930–2 in interest and in quality. Almost equally impressive, and like Highpoint unrivalled by comparable construction in London since, is the Peter Jones Department Store in Sloane Square, designed in 1935 by William Crabtree.[7] Already in 1933 Mendelsohn had settled in England, practising there for a few years in partnership with Serge Chermayeff (b. 1900) before moving on to Israel in 1936. From 1934 to 1937 Gropius was in England working with E. Maxwell Fry (b. 1899); Marcel Breuer (b. 1902), a Hungarian pupil of Gropius from the Bauhaus, was also in England working with F. R. S. Yorke (b. 1906). By the mid thirties Connell, Ward & Lucas,[8] Wells Coates (b. 1895), and Frederick Gibberd (b. 1908) were also well started on their careers.[9]

In Italy, where the projects of an architect associated with Futurism,[10] Antonio Sant'Elia (1888–1916), before his death in the First World War had offered a remarkable premonition of the new architecture of the twenties, a fresh talent at least comparable in interest and individuality to Lubetkin's appeared on the scene in these years. The Casa del Fascio at Como of 1932–6 by Giuseppe Terragni (1904–43) is almost as original as Aalto's Viipuri Library but very different (Plate 172A). In its use of fine marbles and in its innate classicism it recalls Mies, yet it is as Mediterranean in spirit as his work is Northern. Unfortunately, like Sant'Elia before him, Terragni was killed in the Second World War that followed within a few years after the start of his career. However, the firm of Luigi Figini (b. 1903) and Gino Pollini (b. 1903), who continue to be leaders of Italian modern architecture, also made their first mark at this time with the 'Artist's House' that they showed at the Fifth Triennale in Milan in 1933. This was similarly calm and Latin in its handling of the 'international' vocabulary of form.

The Florence railway station, built in 1934–6 by Giovanni Michelucci (b. 1891) and five associated architects, also deserves mention. Michelucci is not to be compared with Terragni or Figini & Pollini, but his station was stylistically the most advanced in the world when it was built. Moreover, like the Casa del Fascio in Como, it offers notable evidence of the support the Fascist regime was still giving to *architettura razionale* at a time when both in Germany and in Russia other authoritarian regimes were denouncing the International Style. The Termini Station in Rome (Plate 183B) was begun even earlier from the designs of Angiolo Mazzoni. It owes its distinguished reputation as the finest station of the twentieth century, however, to the new project of Eugenio Montuori (b. 1907) and his associates, prepared in 1947 and finally carried to effective completion in 1951 (see Chapter 25).

Yet for all the increasingly wide spread of the new architecture by the mid thirties, Le Corbusier and two Germans retained their international position of leadership despite economic depression in France and Hitlerian exile from Germany. If the amount of their executed work was much reduced – in the case of Mies for several years to nil – the geographical range of their activities was now much extended. Today, for example, Le Corbusier's work is to be found from La Plata in Argentina to Chandigarh in India; he was also a consultant on two of the largest and most striking buildings in the New World

built just before and just after the Second World War, the Ministry of Education and Public Health in Rio (Plate 171) and the United Nations Secretariat [11] in New York.

Gropius and Mies, settling in America in the late thirties, became figures of crucial importance in the reform of American architectural education [12] as well as being increasingly productive as architects since the war. At Harvard University [13] and at the Illinois Institute of Technology, respectively, they set a pace for several American architects who later became leading educators, such as Howe at Yale and W. W. Wurster (b. 1895) at the Massachusetts Institute of Technology and the University of California. Mendelsohn, still very much of an individualist, but with a notable international reputation based on what he had built in England and in Israel as well as on his earlier work of the twenties in Germany, practised in America from after the war down to his death.

This extension of the field of activity and the direct influence of the European leaders further emphasizes the universal character of the new architecture. Today American architects, such as the firm of Skidmore, Owings & Merrill,[14] working as far from home as Turkey, or Edward D. Stone (b. 1902), building on three continents, provide almost the most characteristic later examples of what – and in their cases most critics would agree – is not improperly called the International Style. The American Embassies in Copenhagen and in Stockholm, and the flats for embassy personnel at Neuilly and at Boulogne outside Paris, all by Rapson [15] & Van de Gracht, are perhaps the most distinguished examples of American work abroad of the last few years.

But there would have been no El Panamá Hotel in Panama (1950) by Stone, no Istanbul Hilton Hotel (1954) by the Skidmore firm, and no such foreign building programme by the United States Government as is responsible for the executed embassies by Rapson & Van de Gracht of the early fifties and the ones being built by Eero Saarinen in London, by The Architects Co-operative in Athens, by Stone in New Delhi, and several others but for the pioneering of the Europeans, nor did that pioneering cease in the thirties. Only in Oud's case, because of a serious indisposition that removed him from practice for many years after 1930, was the *œuvre* effectively complete with the twenties; and even he is now quite active again. In the case of both Le Corbusier and Mies, if not of Gropius, their largest commissions came only after the Second World War. Their influence today is as great as it was a quarter of a century ago, in Mies's case considerably greater. The mid twentieth century has come to accept stylistic continuity in a way that the nineteenth century was never able to do once the tradition of Romantic Classicism finally wore out. The adventurous current work of these men, now become elder statesmen of modern architecture, fortunately counter-balances to some extent those more rigid interpretations of the discipline they founded, interpretations which have recurrently threatened since the late twenties to become academic and frozen in one country or another.

Many of the more characteristic demands of Le Corbusier's aesthetic canon, as it had been announced in his projects of the early twenties and adumbrated in the succession of houses that led up to the Savoye house of 1929–30 – including restrictions already docilely accepted almost everywhere by advanced architects in the late twenties – were ignored in the buildings he himself was designing in the early thirties. The house that

he built for Hélène de Mandrot at Le Pradet in Provence in 1930–1 is raised on no *pilotis* but sits firmly on a terrace; and its walls, where solid, are of rough, uncoursed rubble. Quiet and rectangular, with no lyrically curved elements and little painted colour, this house accepts the surrounding landscape as Wright's had always done. Le Corbusier seemed here almost to be avowing a respect for local materials and humble village craftsmanship such as is associated with Voysey and his English contemporaries of a generation earlier that would certainly have been anathema to him in the twenties. On the other hand, the penthouse that he built in 1931 for Carlos de Beistegui on top of a block of flats on the Champs Élysées in Paris was all of plate glass and white marble. This had something of the glittering elegance of Mies's Barcelona Pavilion of two years earlier, where the polished marbles, once so brilliantly exploited by Loos, were first brought back after more than a decade of restriction to ascetic and impermanent surfaces of painted stucco.

The Salvation Army Building which Le Corbusier erected in 1931–2 in the Rue Cantagrel in Paris is more in line with the canon of the twenties. Unfortunately the original curtain-wall is now cut up by projecting sunbreaks added in a post-war refurbishing by Le Corbusier's former partner Pierre Jeanneret. The Maison Clarté block of flats of 1930–2 in Geneva is almost as completely glass-walled.

It was most notably the Swiss Hostel at the Cité Universitaire in Paris, designed in 1930 and built in 1931–2, which introduced various quite new elements of plan and design that Le Corbusier would develop much further after the Second World War (Plate 165B). The *pilotis* he used in the twenties were thin and round, rather like Perret's columns, though without their facets and capitals; but here a double row of heavy piers of a complex moulded section carries a dormitory block that is boldly cantilevered out from them both front and back. The rubble masonry of the Mandrot house was used here once more for a tall unbroken wall of irregularly curved plan at the rear of the building; the textured and tonal surface of this wall and its effect of solidity contrasts both with the exposed concrete of the structural elements and with the smooth areas of thin stone plaquage on the upper walls. Curves in Le Corbusier's earlier work were almost always confined within a bounding rectangle and never made of massive materials; yet they lost none of their elegance in being handled in this bolder and more organic way. This is closely related to his later paintings, of which the mural in the common room here provides a major example.

The international depression closed in even more completely on France in the early thirties than it did elsewhere, and there was no subsequent revival of building activity such as other countries experienced in the years preceding the Second World War. Le Corbusier's activities were therefore more and more confined to projects, most of them for commissions outside France. However, a small block of flats, very similar to the Maison Clarté in Geneva, was built at 24 Avenue Nungesser et Coli on the western edge of Paris in 1933. The most interesting portion of this is the architect's own penthouse on top; there, like another Soane, he experimented at small scale with a variety of vault-topped spaces.

In a modest house at 49 Avenue du Chesnay in Vaucresson of 1935 there are no more

curves in plan than in the Mandrot house, but segmental concrete vaults cover the rectangular bays of which the plan is made up. Moreover, as if to underline Le Corbusier's return towards nature after his earlier devotion to the abstract and the mechanistic, grass grows over their crowns to provide insulation. The exposed frame of the concrete structure, where not filled with glass brick, has panels of coursed rubble.

Le Corbusier's projects of the thirties often included new ideas that others exploited even before he was able to do so himself in executed work. For example, the Ministry of Education and Public Health in Rio de Janeiro, on which he was a consultant only, designed in 1937 and completed in 1942 by Lúcio Costa (b. 1902), Oscar Niemeyer (b. 1907), and a group of others, the great building which opened so brilliantly the story of the new architecture in Brazil (Plate 171), included on the west front the projecting sun-breaks he had first proposed in 1933 for certain tall buildings intended to be erected in Algiers. Such sun-breaks have become characteristic of mid-century architecture in all countries where the sun's heat and glare offer a major problem – in Asia and Africa as much as in South America. By this device the all-glass wall, favourite large-scale theme of the new architecture since Mies's early skyscraper projects, received a much-needed functional correction. As often before, a real (or supposed) practical need encouraged the satisfaction of overt or covert aesthetic aspirations; for sun-breaks very much enhance the three-dimensional interest of large façades, substituting for the slick planar effects characteristic of the twenties a more articulated sort of surface treatment related to, but independent of, the expression of skeleton structure. Sun-breaks have even come to be used where they are hardly needed, quite as has been the case with various other clichés of modern architecture.

Since the war three major works of Le Corbusier, in the estimation of many critics his masterpieces, have carried much further the sculptural tendencies of his architecture of the thirties. One of these, the block of flats called the Unité d'Habitation,[16] far out the Boulevard Michelet in Marseilles, which was first projected in 1946 and finally completed in 1952, has various other points of interest, however. The Unité realizes on a large scale Le Corbusier's ideas for the mass-dwelling, providing a single tall slab large enough to house a complete community and including, half-way up, a storey intended to be entirely occupied by shops, as well as other communal facilities on the roof (Plate 166). An ingenious section allows two-storey living-rooms for all the flats and also permits the use of a skip-stop lift system (Figure 51). The framework in front of the walls provides sun protection for the tall living-room windows and also shallow balconies for each flat both front and back.

Like the Swiss Hostel, the Unité is carried on central supports arranged in a double row. These are much more massively sculptural than the earlier ones in Paris, and almost anthropomorphically expressive of weight-bearing. All the poured concrete surfaces are left rough as they came from the forms, and the prefabricated members of the outer sun-break system have an exposed pebble aggregate. Everything is bold and masculine, even coarse, indicating a complete turnabout in Le Corbusier's understanding of the essential 'nature' – itself a rather Wrightian concept – of concrete. On the roof an abstract landscape of sculptural forms plays counterpoint to the superb backdrop of mountains. One

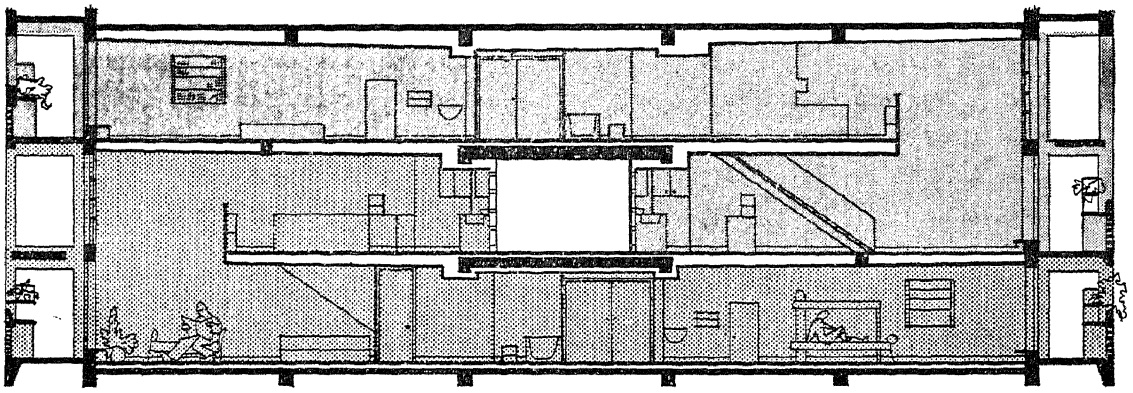


Figure 51. Le Corbusier: Marseilles, Unité d'Habitation, 1946–52, section of three storeys

cannot help remembering the roof of Gaudí's Casa Milá in Barcelona (Plate 137A); there are even some glazed tiles set in the concrete to provide notes of 'permanent polychrome'. Yet the window in the entrance-hall at the base of the slab is quite Neoplasticist in the pattern of its subdivisions and the use of coloured glass; while painted colour of the boldest sort, by no means restricted to the primaries, is used on the sides of the sun-breaks, though not on any of the outer surfaces. Thus has Le Corbusier's later architecture been enriched by a sort of eclecticism quite remote from his Purist aesthetic of the twenties.

At Chandigarh in India, where Le Corbusier has the general responsibility for planning the entire new capital of the State of Punjab and of building the principal public monuments, only two or three of these are as yet finished; the rest of the city is the work of other architects, principally so far Pierre Jeanneret and the English firm of Maxwell Fry and his wife Jane Drew. The High Courts of Justice,[17] built by Le Corbusier in 1951–6, are even more sculptural than the Unité at Marseilles. A continuous umbrella-like shell-vault of concrete rises high above the roofs of the court-rooms to allow the free passage of air (Plate 168A). Supporting this are great rounded piers that merge into the concave surfaces over them, almost like the structural elements of the Casa Milá, but here of monumental scale. On the west side deep box-crates, with brilliant painted colours on their soffits like those on the sun-breaks of the Unité, keep the sun off the glazed walls of the court-rooms and provide that three-dimensional play first exploited on the Ministry in Rio.

Several of the other buildings which are approaching completion at Chandigarh at the time of writing will be almost equally remote from the ascetic canons of the twenties to judge from the published projects and illustrations of the work in progress. However, Le Corbusier's most extraordinary late building is in France, not India, and therefore considerably more accessible to the architects of the western world than his work at Chandigarh. Whether his church of Notre-Dame-du-Haut at Ronchamp, Hte-Saone,[18] built in 1950–5, will have as much influence as the Unité has already had remains debatable because of its very special character. But this church makes even more evident than the High Courts the fact that Le Corbusier in the fifties has been moving in almost the opposite direction from that in which he led in the twenties.

In an exaggerated phrase Le Corbusier described his early houses as *machines à habiter*; but Notre-Dame-du-Haut is more like an enormous piece of sculpture than a 'machine for praying-in' (Plate 167). He who once drove architecture towards the mechanistic, the precise, and the volumetric, now provides the exemplar of a new mode so plastic as almost to be naturalistic in the way of Gaudí's blocks of flats of fifty years earlier. The walls and roof are rough, indeed almost brutal, in finish, and so massive and solid that the interior of the church at certain times of the day seems positively ill-lit by the tiny deep-sunk windows that irregularly penetrate the side walls. In place of an aesthetic expression emulating the impersonal results of engineers' calculations, there is here a freehand quality comparable to the spontaneity of the sculptor. Moreover, where the overtones of his characteristic buildings of the twenties were wholly of the present, this arouses deep prehistoric atavisms – and quite intentionally. Whether Chandigarh and Ronchamp evidence a deep split in modern architecture or represent a major turning point is far from being clear as yet. Few have yet succeeded in following the line of development they appear to open. As with much of Wright's work, it may well be that only the master can hope to move on in so personal a direction.

The later work of the German leaders arouses no such difficult critical problems as does Le Corbusier's; yet it has also ranged sometimes in directions not altogether to be expected from their best-known work of the twenties. Their careers, moreover, suffered a harsher break because of the political tribulations of their homeland than Le Corbusier suffered from the economic tribulations of France. In 1930 Mies became Director of the Bauhaus, remaining until it was closed by Hitler in 1933. Although he won a competition for the Reichsbank in Berlin as late as that year, he was allowed to do no work under the Nazis, and so he settled in the United States in 1938 after a preliminary visit the previous year.

As has been noted, Mendelsohn and Gropius, on leaving Germany in 1933, settled first in England, and both did significant work there – if not especially significant for their own careers, certainly so for the early stage of modern architecture in England. With his English partner Maxwell Fry, Gropius was responsible in 1935–7 for the Impington Village College in Cambridgeshire; this set the pace for post-war school design in England, today about the best in the world. Mendelsohn, with Chermayeff, built in 1934–5 the De La Warr Pavilion at Bexhill on the Sussex coast. In the main this is a rather conventional example of the new architecture; but it has a semicircular glazed stair-tower that recalls the more lyrical quality of his best earlier work such as the Schocken department stores.

From England Mendelsohn moved on to Israel, where a large Government Hospital by him at Haifa and the Medical Centre of the Hadassah University in Jerusalem on Mount Scopus, both of 1936–8, show a most skilful adaptation of the international European canons to a hotter climate and a different cultural tradition, somewhat as is the case with the Ministry at Rio. Only with the onset of the war in 1941 did Mendelsohn settle in America. There his Maimonides Hospital in San Francisco of 1946–50 and synagogues and Jewish community centres in Cleveland (1946–52), St Louis (1946–50), Grand Rapids (1948–52), and St Paul (1950–4) continued to illustrate his very

personal command of the commonly accepted elements of the new architecture, with the inclusion here and there of anomalous features that seem to belong to a much earlier period of his career.

Gropius proceeded directly from England to America in 1937, having been called by Dean Joseph Hudnut of the Graduate School of Design to be Professor of Architecture at Harvard University. He became Chairman of the Architecture Department the following year, which position he retained until 1953. As has already been said, his major contribution to architecture in America has been as an educator. However, he built, in partnership with Breuer, whom he had brought to Harvard, several houses, including his own at Lincoln, Mass., and also a housing development at New Kensington, Penna., in the years 1938–41. These are, on the whole, no more successful than much of his work of the late twenties in Germany, despite an intelligent effort to adapt a European mode to American building methods, particularly as regards the use of wood, both structurally and for sheathing. This turning away, on Gropius's part, from ferro-concrete and rendered surfaces is parallel to Le Corbusier's somewhat earlier reversion to the use of local and traditional materials. The houses that Breuer designed after he parted from Gropius have considerably more intrinsic interest; as is perhaps natural in the work of a younger man, they show a more integral adjustment to the characteristic living habits and building methods of the New World. In the last few years two large-scale commissions, for the Unesco Building [19] in Paris (now nearly finished) and for the Bijenkorf Store in Rotterdam (1955–7), have returned him to the European scene, but as an American rather than a Hungarian or German architect.

Gropius's principal American work has all been done since the war. It includes two large schools at Attleborough, Mass., one of 1948 (Plate 168B) and one of 1954, and the Graduate Centre of Harvard University in Cambridge, Mass., of 1949–50. These were all three designed – as also the already-mentioned Athens Embassy, which is not yet completed – in association with the firm known as TAC (The Architects' Collaborative), consisting of a group of younger architects, all but one educated at Yale University, formed in 1946. In the double quadrangle of buildings at Harvard, forming in itself almost a complete small college, the architecture of the twenties lived on with little change. Light-coloured brick replaced stucco for the walls, however, and there is a certain rather inhibited use of curves in plan and of angular relationships in detail reflecting ideas that had entered the new architecture only in the thirties. The Attleborough schools are less pretentious and altogether more successful, improving upon Gropius and Fry's Impington College of the thirties in England in various ways. Since his retirement as professor, Gropius and TAC have been increasingly active, and he has continued to present his well-known architectural doctrines in lectures, articles, and books.[20]

Coming to the United States a year later than Gropius, Mies also found his greatest opportunity there, and almost at once. In 1939 he was commissioned to design the entire new group of buildings for the Illinois Institute of Technology, which was moving to the south side of Chicago. In this scheme, which is of urbanistic scale and extent, a classic, indeed an almost academic, order prevails throughout (Figure 52). The various buildings that have been executed, two during the war in 1942–4, many more since

1945, have a comparably classic serenity. But they also express with relentless logic the character of their predominantly steel-skeleton construction. In them Mies has almost revived architectural detail by the precision and the elaboration of his handling of the elements of metal structure. As at Gropius's Graduate Centre, light-coloured brick replaces stucco for the solid wall panels. The severe patterns of the black-painted metalwork are organized with something of the purity of Mondriaan's canvases of the twenties yet with a dominating symmetry. This is true also of the interior planning of the individual buildings. However, the latest, Crown Hall, housing the architectural school, completed in 1956, is unsubdivided on the principal floor, and thus represents the most extreme statement of his later ideals, both structurally and planwise.

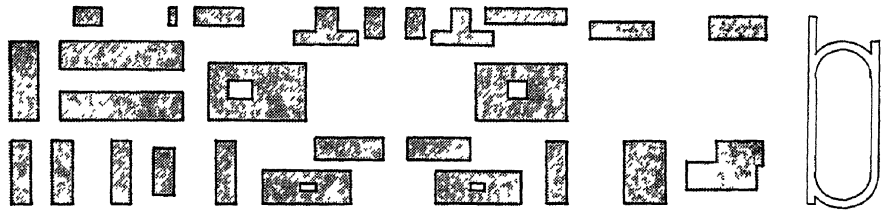


Figure 52. Ludwig Mies van der Rohe: Chicago, Illinois Institute of Technology, 1939–41, general plan

Mies has also built houses and tall blocks of flats in and near Chicago and, with Philip Johnson (b. 1906), a New York skyscraper at 375 Park Avenue for the Seagram Company in 1956–8. His completely glazed Farnsworth house near Plano, Ill., was designed in 1946 and built in 1950.[21] This is a cage of white-painted welded steel raised above the river valley in which it is set and walled partly with great sheets of plate glass, partly with metal screening. The floor is a continuous plane of travertine from which broad travertine steps descend to an open travertine terrace. Planned about a central core in which are placed the fireplace, the bathrooms, and the heater, the interior space is completely unified, the different functional areas being separated only by cupboards that do not rise to the ceiling (Figure 53). Even more than Crown Hall, this house represents the purest and most extreme statement of aesthetic purpose in one particular direction that the new architecture has yet produced – a direction which is, of course, in total opposition to the increasingly complex plastic effects sought in these same years by Le Corbusier. It is, nevertheless, quite as remote from the stucco boxes characteristic of the twenties and even more remote from Mies's own brick houses of that period.

A similarly ascetic luxury is also evident in Mies's blocks of flats at 845–860 Lake Shore Drive in Chicago of 1949–51 (Plate 170). There he seems to have arrived, not imitatively but by force of parallel logic, at something very close to the skyscrapers that Sullivan designed in the nineties (Plate 119). Mies's structural piers, carried down to the ground as free-standing elements just as they are below the Farnsworth house, give the dominant bay rhythm, their structural steelwork being sheathed here first in protective concrete and then in black-painted metal. Between the piers continuous I-beams along the mullion lines stiffen the wall screens which are otherwise entirely of glass held

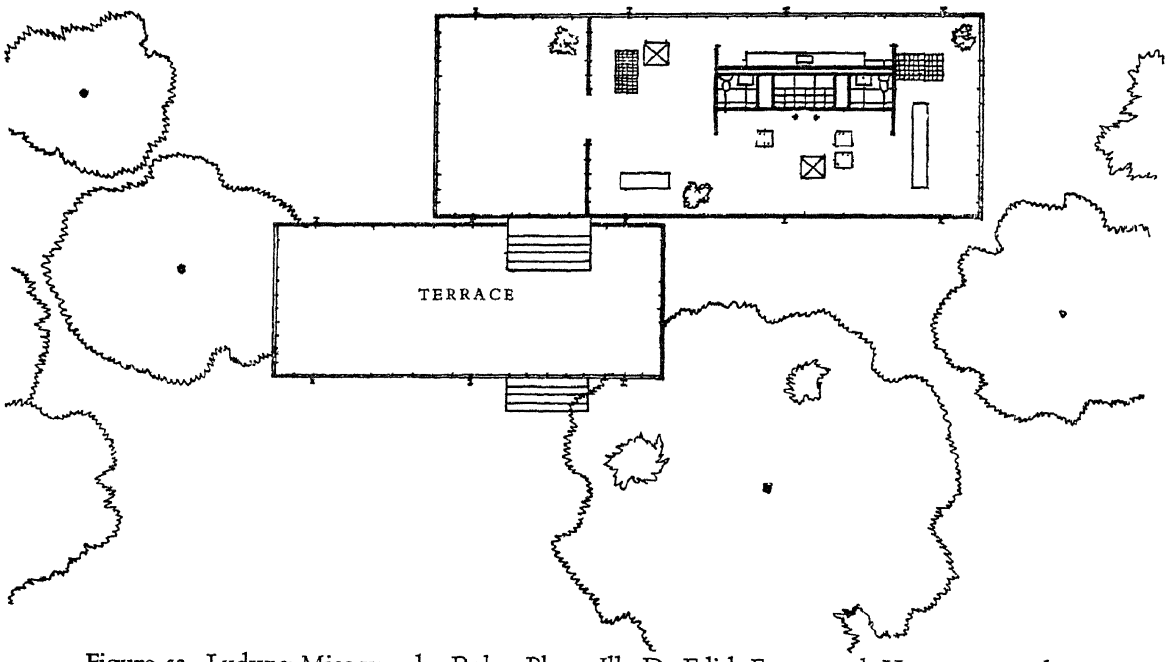


Figure 53. Ludwig Mies van der Rohe: Plano, Ill., Dr Edith Farnsworth House, 1950, plan

in bright aluminium frames; they also provide a subsidiary rhythm, quite as Sullivan's mullions sometimes did in the eighties and nineties.

Identical in shape, rectangular slabs both, the two blocks are set close together and at right angles to one another. This placing gives a minimum of overlap as regards the lake view and a minimum of overlook as regards the privacy of the apartments. The relationship also creates from these very simple shapes a notable variety of effects in perspective. The visual interest is enhanced especially by the fact that the projecting **I**-beams, when seen at a sharp angle, give the illusion that one wall of each block is solid; the other wall, being seen head on or nearly so, appears completely open between the structural piers and the mullions. Two more nearly identical apartment blocks [22] have risen in Chicago from Mies's designs since these were completed, the Esplanade Apartments beside the first two towers, and others are being built farther to the north.

Since his arrival in America Mies has not merely been the architect of the Illinois Institute of Technology's buildings, he soon became head of its Department of Architecture also, a post which he retained until his retirement in 1955. Less articulate than Gropius and occupying a less important academic post, Mies's influence specifically as an educator has been considerably less. On the other hand, the general influence of his work in America in the last few years has been far greater. The 'Miesian' is today almost a sub-school of the new architecture not only in the United States but in several other countries: to Mies not only younger men but also many established practitioners owe the specific direction of their latest work (see Chapter 25).

Just before the Second World War broke out Oud, in 1938, recovered his health sufficiently to undertake a large commission, the Shell Building in The Hague, completed in the course of the next four years. In Holland there had been in the thirties

a strong reaction against the new architecture led by M. J. Granpré-Molière (b. 1883) and the graduates of his school at Delft. Granpré-Molière urged a return, if not to the outright 'traditional', at least to a semi-traditionalism that was not without some similarity to what Hitler was sponsoring in Germany. In response to this challenge Oud set out to show how the new architecture, still considered by many in Holland to be too stark and mechanistic, could be humanized. To return from stucco to brick, in this case a thin glazed white brick such as Dudok was using at this same time with great success on his quite conventionally 'International Style' Erasmus Huis office building in the Coolsingel in Rotterdam,[23] was merely to emulate the rejection of stucco in this decade by the French and German leaders in favour of more permanent, if also more traditional, walling materials, such as marble, rubble, brick, and even wood. But Oud's attempt to revive ornament and the elaborate symmetry and near-academic complications of his over-all design of the Shell Building have had no appeal at all outside Holland. In the small Esveha office building of 1952 near the railway station in Rotterdam and the much larger Vrijzinnige Christelijk Lyceum at 131 Goudsbloemlaan in The Hague of 1953–6 Oud has returned to something much closer to the norms of the new architecture elsewhere. But the day of his great international influence has long been over despite the belated prestige which is his in Holland today.[24]

Like several of the preceding chapters dealing with the architects of the first modern generation, this one has brought certain aspects of our story down to the present. In so doing, the specifically modern architecture of the twentieth century has been largely accounted for; the picture will be rounded out later by offering a synoptic view of the international scene since the Second World War (see Chapter 25). First, however, it is necessary to discuss the architecture that was *not* modern which was produced in the first four decades of this century. Historicism,[25] that is reminiscence of past styles, endemic throughout the nineteenth century, lived on. It is considered polite to call such architecture 'traditional', over-favourably weighted rather than accurate though the term may be. Clearly a traditional architecture that produced a 'Gothic' skyscraper like Cass Gilbert's Woolworth Building (Plate 178) or vast 'Classical' railway stations like the two in New York (Plate 177B) was not unduly restricted by revivalistic canons. Clearly also this sort of architecture cannot be ignored historically, since it produced some of the largest, most prominent, and most carefully studied buildings and groups of buildings of the first third of this century. Moreover, traditionalism gave way only very lately in many countries to modern design; while the authoritarian regimes of Europe in varying degree returned to its sanctions in the thirties just as it was generally losing ground elsewhere in the western world.

There were few if any great leaders among twentieth-century traditional architects; certainly hardly more than one or two approached the calibre or the individual significance of the men whose work Part Three of this book has largely dealt with up to this point. But a conspectus can be provided, with typical examples of the best work in several countries, and some indication offered of the character of the production in other countries where the individual architects were less colourful, the monuments less notable, and the general level of quality less high.

CHAPTER 24

ARCHITECTURE CALLED TRADITIONAL IN THE TWENTIETH CENTURY

THROUGH at least the first three decades of the twentieth century most architects of the western world would have scorned the appellation 'modern' or, if they accepted it, would have defined the term very differently from the way it has been understood in the immediately preceding chapters. For twentieth-century architecture that continued the historicism [1] of the nineteenth century the usual name in English is 'traditional'. This term reflects a fond presumption that such architecture derives its sanctions from the traditions of the further past, although in fact its only real tradition is that of the preceding hundred years. Whatever one calls it, this traditional architecture includes the majority of buildings designed before 1930 in most countries of the western world and a high, but rapidly decreasing, proportion of those erected since.

Statements of this sort are not very relevant when they concern the arts. In the case of every revolutionary change in architecture the same situation has obtained while the old slowly gave way to the new. Since the modern revolution may well be of the scale of the Renaissance, the student of architectural history should recall that from the early crystallization of the new Italian mode – and at first it was no more than a minor regional mode – in Florence around 1420 to the general acceptance of a new international style throughout Europe some two hundred years passed. The Baroque, in succeeding the Renaissance, came to international dominion only by gradual stages and eventually died out, not all at once around 1750, but gradually over the next half century.

Despite prolific production and the quite remarkable things that were occasionally achieved when historicism came to uneasy terms with new technical means – as had already happened not infrequently in the nineteenth century – the traditional architecture of the twentieth century is primarily an instance of survival; and cultural survivals are among the most difficult problems with which history has to deal. Their sluggish life, sunk in inertia and conservatism, is very different from the vitality of new developments. Yet survivals are tough and resilient, tending always to maintain themselves by their very uneventfulness. Static, not to say smug, assurance is their greatest strength; their greatest danger is that boredom resulting from excessive familiarity which they eventually induce.

Survivals do not generally rouse the interest of posterity. The Gothic of fifteenth-century Italy or that of seventeenth-century England has not received from historians the attention of the rising forces in the architecture of those periods. Somewhat unfairly, late and anachronistic achievements, if admired at all, are likely to be credited to the previous age. In America, for example, Grecian plantation houses built as late as the 1850s are frequently called 'Southern Colonial'. We are too well aware today, how-

ever, that the work of the traditional architects of the last fifty or sixty years is of this century, and not of the previous one, to permit that kind of confusion. The historian *must* attempt to give some sort of account of things like the Stockholm City Hall (Plate 174, A and B) and the Woolworth Building (Plate 178). But the story is not an easy one to tell because it seems – at least to the present generation – to lack plot. The rise of modern architecture, on the other hand, offers material for a dramatic narrative, for it follows the pattern of the 'success-story', just as does that of the Gothic in twelfth-century France or the beginnings of the Renaissance in fifteenth-century Italy.

In some areas of the world a meaningful succession of stages can be discerned in the late period of historicism. Because of the differential lags in various parts of the western world, however, it is difficult to find a scheme of organization that is at all generally applicable. All the same, those lags usually mean that certain countries were going through phases of architectural development in the early twentieth century that more advanced areas had left behind before 1900. Since those phases have been discussed in Part Two, it is unnecessary to detail here the peripheral and anachronistic 'repeats' of familiar late nineteenth-century episodes in the present century.

Without attempting to round out the picture with the citation of multiple examples, one may at this point suggest some of the aspects, parallel and successive, of twentieth-century historicism. There was, for example, a characteristic continuation of that reaction against the boldness and coarseness of the architecture of the third quarter of the nineteenth century which is recognizable in most countries, and particularly perhaps in America and England from the eighties; hence the general critical emphasis of the period on 'restraint' and on the 'tasteful'. Academically designed buildings of the 1920s were often still intended to realize aspirations that had been novel some forty years earlier; rarely, however, did they do so with a vitality comparable to that of late nineteenth-century work. So also Gothic of the early twentieth century produced by such American architects as Ralph Adams Cram or James Gamble Rogers hardly differs in its standards from what the English Bodley initiated around 1870.

We have already seen in much of the work of Perret and Behrens a special kind of continuation of the Classical tradition in the twentieth century. This shades down through various degrees and kinds of simplification as represented in the personal modes of such architects as Asplund in Sweden or Marcello Piacentini in Italy to the maintenance of a Classical revivalism as absolute as that of 1800 in white marble temples like Henry Bacon's Lincoln Memorial in Washington (Plate 180).

The medievalizing currents of the nineteenth century link up with many aspects of the advanced architecture of the early twentieth century. This aftermath, often vital and creative in the fields of theory and of craftsmanship with architects as different as the English Voysey and the Spanish Gaudí, likewise shades down through various levels of decreasing stylization to a literal revivalism that is still in the Victorian tradition, but more in line with that tradition's early or Puginian phase or its latest Bodleyan phase than with the Butterfieldian phase of the 1850s and 1860s.

Both on the Classical and on the Gothic side of the fence, however, there have been a few twentieth-century traditional architects whose personal stylization of borrowed

forms was almost as extreme as that of the High Victorians. In their work, intense individualism and limited respect for the canons of 'taste' and 'restraint' offer real points of contact with the brashness of such modern architects of the first generation as Wright and de Klerk. This is in contrast to the other line of traditionalist integrity in the handling of materials that was solidly based on Gothic Revival standards of revived hand-craftsmanship, one of the truly positive values contributed to the next generation by such architects as Richardson in America and Webb in England. The two lines could also in some milieus combine to produce, particularly in Scandinavia, some of the most impressive works of the early twentieth century. Such an outline, blurred and overlapping in its rubrics, can do little more than suggest some of the principal later channels of the architectural currents which were carried over from the nineteenth century into the early decades of the twentieth century.

There is still hardly a country in the world where buildings of traditional design are not being erected; but whatever vitality twentieth-century traditional architecture retained as late as the second and even the third decade of the century had departed by the fourth. Post-mortems on traditional architecture have been many – and often premature. The causes of death are still disputable, but the fact of dissolution is by now generally accepted. Yet the last years of traditional architecture were not completely senile. However much the youthful vitality of the newer architecture attracts sympathy and attention, as late as 1930 its impact on building production was in most countries a very limited one. It is fortunate, therefore, that not all the traditional architecture of the years 1900–30 need be dismissed with scorn, even if the standards by which it must be judged remain those of the nineteenth rather than of the twentieth century.

The nineteenth century ended, as we have seen earlier, with a surge of innovation (see Chapters 14, 15, and 16). Looking forward from the late nineties, a prophet might well have assumed that a new architecture would surely arise just beyond the turn of the century; yet within a few years a general reaction set in which took somewhat different forms in various parts of the western world. As has already been noted, there were almost everywhere strong links with the earlier Academic Reaction of the eighties against the bold and brash 'high styles' of the mid century; indeed, it may be said that the traditional architecture of the new century was in general both a continuance and a resurgence of that reaction. In most European countries, although not in England and America, the academic architecture of the late nineteenth century had represented little more than a resurgence or a continuance of certain aspects of decadent Romantic Classicism. Seeking a loftier pedigree, however, conservative architects often claimed that they were returning to traditions that had existed down to less than a century before their own day, quite as various reformers from Pugin to Voysey claimed they were renewing a link with one or another earlier period.

Relatively valid as this might still have been for certain aspects of the Queen Anne in England and the Colonial Revival in America, or for the parallel return to eighteenth-century modes in various Continental countries towards the end of the century, this theory had already run into serious difficulties long before 1900. A church might hope to be plausibly Gothic, but a railway station could only be Victorian Gothic; a sky-

scraper could not even be as Gothic as that. Moreover, the tide of eclecticism that had been rising since the mid eighteenth century was not turned back; for both the reaction of the 1880s and the later reaction of the early 1900s represented chiefly a rejection of earlier nineteenth-century innovations, especially of novel sorts of detail, rather than positive programmes of exclusive revival.

It is possible, at least for individual countries, to make statements concerning what occurred in the field of traditional design between the 1890s and the 1930s that are not wholly without significance. Of Holland it may be said, negatively, that no reaction of consequence towards the traditional occurred before the mid thirties. In Germany the boundary line between what was traditional and what was modern was always fairly vague; yet evidence of a return to stylistic reminiscence after the earliest years of the century is to be found even in the work of leaders of the first generation of modern architects such as Olbrich and Behrens (see Chapter 20). Farther to the North in Denmark and Sweden, the Copenhagen Town Hall of 1893–1902 (Plate 173A) by Martin Nyrop (1849–1923) and the contemporary post offices and fire stations in Stockholm and Malmö by Ferdinand Boberg (1860–1940) resemble Berlage's Exchange in Amsterdam in their haunting parallelism to the Richardsonian of the eighties in America and even, to some extent, to the Shavian of the seventies in England. It is true that Absalons Gaard, built in 1901–2 by Vilhelm Fischer (1868–1914) in the square in front of Nyrop's Town Hall, and even more notably the nearby Palace Hotel of 1907–10 by Anton Rosen (1859–1928), developed the freer implications of Nyrop's manner with an almost Dutch verve. But more characteristically there followed in Scandinavia from about 1900, as elsewhere rather earlier, a programme of tasteful emulation of local versions of the Baroque and then, from shortly after 1910 in Denmark and a decade later in Sweden, an even more programmatic revival of Romantic Classicism.

In the Scandinavian development from 1890 to 1930 there is therefore a sort of 'plot' or recognizable sequence of phases despite their overlappings. What has been called 'National Romanticism', rooted in the cultural climate of the eighties, had a briefer span in Denmark than in Sweden. Nyrop's Town Hall, begun in 1893, although in fact hardly more traditional than Berlage's Amsterdam Exchange, introduced the mode, and the Stockholm Town Hall (Plate 174, A and B) by Ragnar Östberg (1866–1945), completed thirty years later, brought it to a close. But its dominion in Denmark was never exclusive. Although the Custom House of 1897 at Aarhus by Hack Kampmann (1856–1920) with its picturesque high roofs and corner towers belongs to the mode, his Aarhus Theatre of 1898–1900 and his City Library (Plate 173B) there of 1898–1902 do not. Externally, the theatre is in the main of Early Renaissance design, although with considerable eclecticism in the detail; on the other hand, the library is even less traditional than Nyrop's Town Hall. Both, moreover, have extremely rich plaster decoration inside that may not improperly be called Art Nouveau.

Wahlmann's Engelbrecht Church of 1904–14 in Stockholm, mentioned earlier as an exception to the general dominance of tradition in Scandinavia in these decades, and the Grundvig Church in Copenhagen (Plate 175B) by P. W. Jensen Klint (1853–1930), originally designed in 1913 and completed finally in 1926, are both closely related to the

earlier National Romanticism of the eighties and nineties. By the time the latter was designed, however, this phase had for some years been superseded by a sort of Neo-Baroque still also very nationalistic in its choice of precedents and very romantic in their handling. Sometimes, however, this mode approached eighteenth-century revivalism of the sort that flourished in England and America. For example, the Marselisberg Slot, built by Kampmann for the Danish Crown Prince at Aarhus in 1899–1902, is the precise Danish equivalent of the best Neo-Georgian houses of the period in England and America.

Monuments such as the Masthugg Church (Plate 175A) of 1910–14 in Göteborg by Sigfrid Ericson (b. 1874) or the Högalids Church of 1916–23 in Stockholm by Ivar Tengbom (b. 1878) are hardly recognizable as Neo-Baroque to non-Swedish eyes, for they are composed with a sense of visual drama quite equal to Wahlmann's and very stylized in all their detailing. Ericson's, in particular, has much in common with the American Shingle Style, although that was rarely used for churches and never for big ones of stone or brick construction.

In much secular Swedish work in the Neo-Baroque mode, such as the very typical ASEA Building of 1916–19 in Västeros by Erik Hahr (1869–1944), bold asymmetrical massing and onion-domed towers reflect the romanticism of the churches and also recall early stages of the revived Queen Anne in England in the seventies. Danish taste in the second decade of the century was much more severe than Swedish, as in fact it had always been, and the characteristic low-cost housing blocks in Copenhagen of this period, such as those of 1914 in the Amagertorv by Hansen & Hygom, are, so to say, only Neo-Baroque round the edges.

For the 1920s, however, the most significant phase was the third, that is the return to Romantic Classicism. This was initiated in Denmark by Carl Petersen (1874–1923) in his Faaborg Museum designed in 1912, and reached its climax immediately after the First World War. In Sweden the parallel phase began a bit later. By the time such men as Fisker in Denmark, Asplund in Sweden, and Aalto in Finland became 'converts' to the International Style in the late twenties, Scandinavian traditionalism had become almost as purged of stylistic detail as the architecture of Tony Garnier, or even that of Adolf Loos, had been for a generation.

On the whole the Danes and the Swedes produced the most lively and distinguished traditional architecture of the early decades of the century. Medievalizing churches in Scandinavia, such as the just-mentioned Grundvig Church in Copenhagen, where Jensen Klint followed Baltic modes that seemed strange and even Expressionist to foreign eyes, or Tengbom's Högalids Church in Stockholm, superbly sited and actually much more Baroque than Gothic in its detail, make the respectable Neo-Perpendicular and Neo-Georgian exercises of contemporary Anglo-Saxon architects look timid and unimaginative. In both cases it is the stylization of proportion – the tremendous verticality – that makes them striking and full of a sort of vitality, at once nervous and lusty, which is comparable to that of the best High Victorian Gothic churches.

The finest medievalizing work is undoubtedly Östberg's Stockholm Town Hall of 1909–23. This is an exceedingly eclectic combination of elements adapted from various

periods both of the Swedish and the general European past. Superbly set at the water's edge, it is sumptuously decorated inside and out with products of craftsmanship that are of a very high order of competence (Plate 174, A and B). Despite his eclecticism, Östberg succeeded in imposing on all his disparate elements a high degree of personal stylization at the same time that he exploited the situation with marvellous dramatic effect. There is also a witty allusiveness suggesting the art of the theatre and the exotic fantasies of the late eighteenth century. The Stockholm Town Hall provides a sort of pageant-setting for the ceremonial life of the city, recalling the splendours of town-hall architecture of many epochs of the past, even though it lacks the straightforwardness and the integrity of Nyrop's earlier Town Hall in Copenhagen.

The outside world had hardly had time to apprehend such new Scandinavian building in the years following the First World War before it became evident that architecture in these countries, hitherto on the whole in stylistic retard of developments elsewhere by almost a generation, had taken a surprisingly sharp turn. Petersen's museum at Faaborg followed the local Romantic Classical models of C. F. Hansen far more literally than any of the contemporary admirers of Schinkel in Germany were doing. Brought to completion in 1916 during the First World War, it attracted very little foreign attention at the time it was built. But the Police Headquarters in Copenhagen by Kampmann, erected after the war in 1918–22, with its great colonnaded circular court, and the Øregaard School (Plate 176B) at 32 Gersonsvej in the Gentofte Kommune north of Copenhagen by Edward Thomsen (b. 1884) and G. B. Hagen (1873–1941) that followed in 1922–4 were at once noticed abroad. Both indeed are notable for their grandeur and for their simplicity, the latter realizing old Romantic Classical ideals with extraordinary success, the former coming closer to the academic work of McKim, Mead & White in America.

Still simpler, and not without a similar sort of understated grandeur surprising in such work, were the Danish low-cost housing blocks erected in the early twenties in succession to those of Hansen & Hygom. Those by Povl Baumann (b. 1878) in the Hans Tavsengade or the enormous Hornsbaekhus of 1923 by Kay Fisker (b. 1893), all in Copenhagen, are especially fine. The extreme precision, the elegant craftsmanship in brick, and the ascetic detailing of these blocks of flats, rivalling the contemporary ones by de Klerk and by Kramer in Amsterdam in quality but subscribing to a quite opposed aesthetic, are found also in many Danish private houses of the twenties built by Gotfred Tvede (1863–1947) and other architects both in the city and in the country.

Although Carl Westmann (1866–1936) in the Röhss Museum of Handicraft at Göteborg and Erik Lallerstedt (1864–1955) in the University of Architecture and Engineering at Stockholm approached the simplicity and fine craftsmanship in brick of the Danes, Swedish work of this period was in general richer and more robust, still reflecting the very eclectic sources of inspiration of Östberg's Town Hall. However, in 1923 Neo-Classicism of a more attenuated and whimsical order than Petersen's made a striking appearance in the buildings for the Göteborg Jubilee Exhibition. Of these the Congress Hall by Arvid Bjerke (b. 1880), with its serried clerestories carried on arched principals, was the boldest and least reminiscent. These Göteborg pavilions were very influential

abroad in the mid and late twenties; detailing of Swedish inspiration then seemed to offer to traditional designers elsewhere a sort of Nordic spice with which to enliven the dead-level of the local eighteenth-century revivals.

Tengbom, deserting the romantic eclecticism and the emotional drama of his earlier Högalids Church, used a highly stylized, almost exposition-like, Neo-Classic mode for his Stockholm Concert Hall of 1920–6. However, the climax in Sweden – if not, indeed, the climax as regards all Scandinavia – came with Asplund's Central Library in Stockholm, begun in 1921 and much simplified and refined as construction proceeded through the mid twenties. Rejecting the frivolous decorative detail of his Skandia Cinema of 1922–3, Asplund rivalled the Danes in reducing architecture to geometrical simplicity (Plate 176A). Thus he might almost seem to have passed beyond C. F. Hansen and Schinkel, the Scandinavian idols of the day, to draw the inspiration for his plain cylinder rising out of a cube directly from Ledoux or Boullée (Plate 2A); while at the base he ran a continuous band of windows derived from the newest architecture of these years in France, Germany, and Holland. This juxtaposition in the same edifice of Ledoux and Le Corbusier, so to put it, is rather awkward; but it is highly symptomatic of the very slight step that the Scandinavians had still to take in the late twenties when they gave up revived Romantic Classicism – already pared down to basic geometry in this library and in much Danish housing – to become outright converts to the 'International Style'.

Although Sweden and Denmark produced no modern architect of the first generation of such individual distinction as the Finnish Saarinen, and must in any case be considered to have started out around 1900 from a position somewhat in retard of the French and the Germans, their early twentieth-century architecture largely avoided the stasis of traditionalism elsewhere, moving through overlapping but discrete phases to an early and sympathetic acceptance of the new international architecture of the twenties even before that decade was over. So clear a picture is hard to discern in most other countries.

In the United States the pattern of development between the 1890s and the 1930s, in so far as one can make out any pattern at all, was quite different; nor was there in America, in the way of England in the twenties, any Swedish influence of consequence. Movements roughly equivalent to the Scandinavian National Romanticism of 1900, the Richardsonian Romanesque and the Shingle Style, had flourished in the eighties and come to an end by 1900. The Academic Reaction that early succeeded them swept on, however, for some forty years. Despite the ruling eclecticism of taste that permitted an archaeological sort of revived Gothic still to thrive as a mode for churches and educational institutions, the more widely favoured Classical, Renaissance, and Georgian stylisms had all been initiated by McKim, Mead & White in the eighties and early nineties. The quality of their work began to decline[2] almost as soon as their professional primacy became assured; yet their best buildings of the first decade of the new century undoubtedly remain among the most competent, if unexciting, examples of traditional architecture then produced anywhere. Americans, not Frenchmen, were in these decades the worthiest products of the École des Beaux-Arts, and thus heirs of the strongest academic tradition in the world.

Whether McKim, Mead & White's models be Renaissance, as in the University Club in New York (Plate 179) completed in 1900, the series of Branch Public Libraries there that were built over the next dozen years, and the Tiffany Building finished in 1906; or Classical, as in the Knickerbocker Trust in New York and the Bank of Montreal in Montreal, both completed in 1904, the very similar Girard Trust in Philadelphia of 1908, and the vast Pennsylvania Station in New York of 1906–10, this New York firm was clearly one of the truest successors to the nineteenth-century academic heritage that so many of the French were frittering away at the opening of the new century in a half-hearted flirtation with the Art Nouveau.

The Gare d'Orsay in Paris of 1898–1900 (Plate 183A) by V.-A.-F. Laloux (1856–1937) is no more to be compared with the Americans' station than his Hôtel de Ville at Tours of 1904–5 with their clubs and banks – his best work, closer to the tradition of Duquesney and Hittorff, was an earlier station, that at Tours of 1895–8. Yet Laloux was often considered the most accomplished French traditional architect of the period.[3] Moreover, the McKim, Mead & White repertory of stylistic modes was wide: much wider than that of the French, although Laloux did produce in Saint-Martin at Tours, completed in 1904, a domed basilica still in the line of the earlier French Romanesquoid churches, though not at all of the quality of Vaudremer's Saint-Pierre-de-Montrouge of the sixties.

McKim, Mead & White exploited a vernacular Colonial Revival, as in the E. D. Morgan house of 1900 at Wheatley Hills, Long Island, as well as a more formal Neo-Georgian, at which several others, such as Delano & Aldrich[4] and Charles A. Platt (1861–1933), were quite as competent as they. But they could also shade their Classicism towards the Byzantine, as in the Madison Avenue Presbyterian Church in New York completed in 1906, or adapt it to industrial uses, as in the I.R.T. Power Station in New York of 1903. They could even extend it upward into skyscrapers, as in the New York Municipal Building completed in 1908, concentrating all their attention on the ground floor and the crowning feature while ignoring the many-storeyed shank between; or spread it thin over large apartment houses such as that they built in 1918 at 998 Fifth Avenue, one of the best examples of the apparently solid blocks that walled one side of that thoroughfare above 57th Street facing Central Park and soon turned Park Avenue from 46th to 96th Street into a man-made canyon. The one thing they and their contemporaries seemed to be unable to do was to make their architecture live, even with the derivative vitality of the Scandinavians. Frozen ideals of stylistic 'correctness' stifled such expression of individual personality as gives real character to the work of a Tengbom or a Kampmann even when it comes closest to theirs.

In popular estimation certain buildings that made use of Gothic rather than Classical, Renaissance, or Georgian forms had a higher reputation. Cass Gilbert's already-mentioned Woolworth Building finished in 1913 (Plate 178) initiated a considerable range of Gothic skyscrapers, including Howells & Hood's Chicago Tribune Tower of 1923–5, but it remains in the judgement of posterity the most notable example of this sort of applied medieval design. Despite the considerable acclaim it received when new, such an equally characteristic Romanesquoid example as the Shelton Hotel of 1929 by

Arthur Loomis Harmon (b. 1901) rivals Gilbert's no more in interest than in height. The New York Telephone Company Building, completed in 1926 by Ralph Walker (b. 1889) at the beginning of his career with the firm of McKenzie, Voorhees & Gmelin, is more original. Its fortress-like masses, somewhat frivolously relieved by ornamental touches borrowed from the Paris Exposition of 1925, and its isolated location at the Hudson River's edge, ensure that its bold silhouette will long vie, for the visitor arriving from abroad, with the so much taller and richer silhouette of the Woolworth Building. Most of the other individual big buildings of the twenties in New York and other large American cities are no more than incidental elements in the man-made mountain ranges of their skylines.

Curiously enough the 'correct' Gothic churches of this period do not receive today as favourable a response as the large-scale medievalizing secular work that is necessarily so very unlike real work of the Middle Ages. Those of Ralph Adams Cram (1863–1942), then the most esteemed Gothic practitioner, are lifeless and even crude beside Bodley's and Pearson's in England from which they largely derive. His first church, All Saints', Ashmont, outside Boston which was built in 1892 is by its early date the least anachronistic. Cram's former partner Goodhue's St Vincent Ferrer in New York completed in 1916, a competent and well-scaled example of Late Gothic that is more Continental than English in character, is rather more successful than any of their joint work or that which Cram did later with his other partner Ferguson. Bertram Grosvenor Goodhue (1869–1924), responsible also, as has been noted, for the Spanish Colonial revival in California, moved on in the early twenties just before his death to an eclectic sort of semi-modernism best represented by his Nebraska State Capitol in Lincoln. This is vaguely Byzantinesque, yet towered instead of being domed in what had been the tradition for state capitols ever since Bulfinch's in Boston. His contemporary Los Angeles Public Library is starker and more like a project by Tony Garnier.

There were other architects to match McKim, Mead & White directly at their own academic exercises: most notably John Russell Pope (1874–1937), with his Temple of Scottish Rite in Washington completed in 1916, a grandiose reconstruction of the Mausoleum at Halicarnassus; and Henry Bacon (1866–1924), with his Lincoln Memorial completed the following year (Plate 180). The latter is a peripteral Greek Doric temple of white marble with a high attic that might almost have been designed in Paris in the 1780s – no mean compliment. Equally French in spirit, but with no such evident prototypes, is the Grand Central Station in New York, built in 1903–13 by Reed & Stem and Warren & Wetmore.[5] More efficiently organized than the Pennsylvania Station, its concourse is one of the grandest spaces the early twentieth century ever enclosed (Plate 177B).

Compared to most work of these decades by French architects, all trained like the American leaders at the École des Beaux-Arts, the greater 'correctness' of the detailing of these buildings is notable. The boast of 'good taste' was not altogether a hollow one, although it is at best a negative rather than a positive criterion for architecture.

So extensive was American building production during the twenties that it is difficult to know how to epitomize it.[6] On the one hand, there are the later skyscrapers, essaying

new stylistic garments as the older ones lost their piquancy. Even before the Romanesquoid of Harmon's Shelton Hotel had come the massive simplicity of Walker's Telephone Building. But for all the playing around with superficially novel decoration borrowed from the Paris Exposition of 1925 in the succeeding years, there was no basic renewal of form before next decade opened. Just after the crash of 1929 terminated the boom, the second skyscraper age came to a belated close with the erection in the early thirties of Shreve, Lamb & Harmon's Empire State Building and the initiation of the Rockefeller Center project.[7] There a more urbanistic grouping, extending over a considerable area, replaced the earlier ideal of building single structures of ever greater height that had just reached its climax with the Empire State Building. This change in approach, recognized ever since as a turning point, has yet to be significantly followed up, except in the spaced skyscrapers of Pittsburgh's rebuilt Golden Triangle mentioned earlier. However, various big urban projects lately announced for New York, Boston, Fort Worth, and other cities, and even a few that have already been started in Philadelphia, Detroit, and Denver, offer promise along this line.

In the terms of this chapter neither the Empire State Building nor Rockefeller Center are examples of traditional architecture, even if it is hardly proper to consider them 'modern' in the sense of the European architecture of their day. Although likewise no example of the new architecture as then understood in Europe like Howe & Lescaze's Philadelphia Savings Fund Society Building of 1932 (Plate 169), such a clean-cut skyscraper as Hood's vertically striped Daily News Building in New York marked with more distinction than its outsize rivals the end of traditional design in this field.

Almost as remarkable as the later skyscrapers for their size and elaboration were the groups of new buildings in which so many academic institutions, both new and old, variously housed themselves. The mode is Classical at the Massachusetts Institute of Technology, built by Welles Bosworth (b. 1869) in 1912–15 on the Charles River in Cambridge, Mass.; 'Georgian-Colonial' in the range of 'Houses' that Coolidge, Shepley, Bulfinch & Abbott[8] built in the twenties for Harvard, also along the Charles River in Cambridge; it is Gothic at Cram & Ferguson's Graduate College at Princeton, N.J. (Plate 177A) completed in 1913, in the Harkness Quadrangle, designed in 1917, and other later buildings for Yale at New Haven, Conn., by James Gamble Rogers (1867–1947), and at the Men's Campus by Horace Trumbauer (1869–1938) at Duke University in Durham, North Carolina; it is even, by exception, Byzantinoid at Cram's Rice Institute at Houston, Texas, opened in 1912. The usual modes for such work were what was known as 'Collegiate' Gothic, based rather loosely on work at Oxford and Cambridge that was quite as likely to be nineteenth-century as medieval in date, and Neo-Georgian in an Anglo-American version, usually too grand to be plausibly Colonial yet too casually composed to be properly Anglo-Palladian. Curiously enough, the Gothic Cram's Neo-Georgian Sweet Briar College in Virginia of 1901-6 is more successful than much of his own medievalizing work or than comparable work by those who specialized in eighteenth-century design.

The technical competence of American architects in this period was very great, the sums of money available almost unlimited, and the avowed standards of design only

the vague ones of 'taste' and 'correctness', by this time little more than a schoolmasterish respect for precedent in detail, though rarely in over-all composition.[9] Far less than in Scandinavia is it possible to define the particular ways in which the period expressed itself, for express itself America in these decades undoubtedly did. Yet, when Americans of this period worked abroad, what they produced is readily distinguishable from the work of local traditionalists. The American Academy on the Gianicolo in Rome, built by McKim, Mead & White in 1913, has a certain chaste precision in its High Renaissance detailing no Italian could then have achieved even if he had wanted to. In London Helmle & Corbett's[10] Bush House, rising between the Strand and Aldwych, has a clarity of form and a sense of urbanistic responsibility that few comparable buildings of its period designed by leading British architects display; up to a point, the same is true of Carrère & Hastings's[11] Devonshire House in Piccadilly of 1924–6. The Ritz Hotel of 1906 across the street by the Anglo-French firm of Mewès & Davis,[12] both of them trained at the École des Beaux-Arts as was Thomas Hastings, is bolder in scale, less priggish, but it also lacks the suavity and finish of its neighbour. Bolder also, indeed too monumental for its size, is Barclays Bank of 1926 by W. Curtis Green (b. 1875), near by in Piccadilly across Arlington Street. Of more nearly comparable quality is Green's earlier Westminster Bank of 1922–3 on the north side of Piccadilly.

Somewhere between the extreme professional competence of the traditional architects of America, a competence almost wholly anonymous in its results, and the intensely personal expression of the Scandinavians lies the pattern that the best traditional architecture, such as Green's, followed in England in the early twentieth century. But before turning to that a good deal more should first be said concerning both the competence and the anonymity of American production, since that competence and even that anonymity have come to be rather generally accepted throughout the western world as desirable[13] characteristics of modern architecture.

Partnerships were not unknown in the nineteenth century, although professional alliances between strong personalities rarely lasted for long. When the partner was not an equal the historian is often justified in writing, say, of G. G. Scott and forgetting Moffatt or, with rather less justification, only of Sullivan while ignoring Adler. But architectural firms that include three or more named partners, with still other members listed only on the letter-head; others such as D. H. Burnham *and Company* and Albert Kahn *Incorporated*, or 'partnerships', such as McKim, Mead & White or Cram & Ferguson, which continue to function under the same name for decades after the death of the original partners like so many firms of lawyers: these are more or less peculiar to the twentieth century and first became common in the United States. Today, moreover, an architect of European background like Mies van der Rohe does not undertake large-scale operations in America, such as the group of buildings for the Illinois Institute of Technology or *a fortiori* his tall blocks of flats in Chicago and the Seagram skyscraper in New York, without associating himself with such large local firms. Wright and Gropius solve the problem somewhat differently; but the Taliesin Fellowship and TAC provide them respectively with the relatively modest and idiosyncratic equivalents of the

organization of the big Harrison & Abramowitz firm in New York or of one of the Skidmore, Owings & Merrill offices in Chicago, New York, San Francisco, and Portland.

The development of the characteristic large-scale American architectural office seems to have begun in Chicago. Burnham, on the death of his designing partner Root in 1891, just after they had undertaken the primary responsibility for the general planning and building of the World's Fair of 1893, had to set up an organization of which he was no more than the executive head. But the office of McKim, his closest associate in carrying out the Fair, was certainly already far advanced along a parallel road. There is a definite connexion here also with the rise of the skyscraper, for those very large commercial buildings already required a vast amount of uninspired draughting that could be efficiently undertaken only by a large force of assistants working in what came later to be derisively called 'plan-factories'.

The same is even more true of industrial work. Here Albert Kahn took the lead around 1905 in developing a type of subdivision and flow of work in his office in Detroit comparable to the new methods of mass-production that his motor-car factories were specifically designed to facilitate. Such patterns are found at their extreme in the group [14] of firms that together produced Rockefeller Center, in the Harrison & Abramowitz office which is in effect their heir, and in the largely post-war expansion of Skidmore, Owings & Merrill. Abroad, more characteristically, such organizations have been built up in offices under a public authority such as those of the London and the Hertfordshire County Councils, the City Architects' Offices in various German cities, or the Banco Obrero housing agency in Venezuela.

'Plan-factories' are undoubtedly conducive to speed and to a certain sort of competence in the execution of large projects, but it must be evident that the architecture they produce will necessarily be anonymous. In defining the character of their competence, moreover, one must be careful not to imply too much. Only such team-work, perhaps, can organize the logistics of building production in such a way that extensive and ramified ventures are carried rapidly to completion, a desideratum of the first order in a boom period for skyscrapers that must be finished quickly in order to begin repaying their enormous cost. Efficiency is of a different sort of consequence where large-scale building schemes of a more public and social nature are being undertaken, but none the less extremely important. Le Corbusier's Unité at Marseilles, produced without an elaborate office organization, took some six years to build; as a result it was no longer 'low-cost housing' when it was finally completed.

Yet competence in the sections of a big office that deal with the plumbing, say, or the electrical system is no assurance that the quite different sort of competence required in the design department will be available. Moreover, a brilliant initial design may or may not survive intact the various modifications that other departments bring to it as the preparatory paper-work for the building moves through successive stages to ultimate execution. At best, even when a particular designer's name is associated with a particular building, as is that of Gordon Bunshaft of Skidmore, Owings & Merrill with Lever House (Plate 191), his responsibility is of a very different order from Wright's for the

Price Tower – although not perhaps so different from Mies's for the Seagram skyscraper.

The situation in England in the first third of the century was rather different from that in America despite a nineteenth-century inheritance which was in many aspects common to both countries. One architect, Sir Edwin Lutyens, had a personal capacity for invention along traditional lines superior to that of any American of his generation. This was not, however, of the order of individualistic intensity of an Östberg or a Jensen Klint, nor was he able, in the way of an Asplund or even a Hood, to accept around 1930 the discipline of the newer architecture of the day. Lutyens built no skyscrapers, nor did he develop the sort of office organization that made them possible in America. This was, however, occurring to some extent by the twenties and thirties in other big English offices, such as that of Sir John Burnet & Tait [15] and of Curtis Green.

All the same, it fell to Lutyens's lot to build some of the biggest business structures erected anywhere outside America in these years, and his career culminated in the design and construction of an imperial capital such as came the way of no American. His competence was of a more nineteenth-century order than that of the Americans, and there was certainly nothing anonymous about his work. He is, moreover, still an inspiriting figure in an England where architecture, under the difficult economic conditions since the last war, has tended to become anonymous without becoming especially competent, except for housing and for schools (see Chapter 25).

Lutyens's beginnings were very remote from the world of business and governmental buildings with which his career wound up (see Chapter 15). Very early houses, such as Ruckmans of 1894 at Oakwood Park or Sullingstead of 1896 at Hascombe, both in Surrey, followed directly in the line of Shaw's Surrey manor-houses with their tile-hung walls, free and easy composition, and simple domesticity of tone. They are, indeed, superior to most of Shaw's – the first of which, Glen Andred, was built almost thirty years earlier and the last about this time – because of Lutyens's respect for Webb and the resultant superiority of his craftsmanship. In his finest early houses, such as Deanery Gardens at Sonning of 1901 (Plate 182B), he rivalled Voysey. He was already inclined, however, like Webb in many of his later houses, to use considerable stylistic detail, usually Neo-Georgian, in his interiors, and here and there on exteriors as well.

Perhaps the revolution – or counter-revolution – in his development represented by his Heathcote of 1906 at Ilkley in Yorkshire has been somewhat exaggerated. Yet the design of this, completely symmetrical and quite elaborately Palladian in detail, did represent as great a shift in approach, taken in one jump, as that from Shaw's Glen Andred of the late sixties to his Chesters of the early nineties. It was, however, practically the same shift. Eclectic like almost all the traditional architects of his generation, Lutyens still occasionally remodelled medieval houses, but the main line of his development henceforth was certainly Neo-Georgian. Yet it was usually Neo-Georgian with an important difference from what had become by this time in England as in America a rather drearily codified mode. Nashdom at Taplow in Buckinghamshire, built in 1909, is a vast white-painted house, plain, regular, massive, and hardly at all archaeological (Plate 182A). Yet this is so handsomely proportioned and so well built that one could well believe it to be the result of some generations-long process of accretion in the

eighteenth century. Great Maytham in Kent of 1910 is Queen Anne, but not the Queen Anne of the 1870s. Here a great mansion of the early eighteenth century was re-created with such a plausibility of craftsmanship that after only half a century it is hard to believe it is not two hundred and fifty years old. A somewhat smaller house, the Salutation at Sandwich of 1912, is similar and perhaps even more remarkable as an example of what is almost 'productive archaeology' on the part of a man who was not, in fact, at all archaeologically minded. Such houses are the twentieth-century equivalents of Devey's in the nineteenth century, but they often have a witty originality in the handling of traditional detail that has aptly been called 'naughty' and is peculiarly personal to Lutyens.[16]

If the Georgian had to be revived in the way of the Greek and the Gothic, it could hardly have been done with more competence and more animation; certainly the Americans of Lutyens's generation rarely excelled so notably in this particular field, although many of the once highly esteemed firms mentioned earlier positively specialized in it. Beside these houses of Lutyens, the Neo-Georgian of the Shepley firm's Harvard Houses or Cram's Sweet Briar College is merely routine. Yet in such work Lutyens was still only a country-house architect.

Before discussing Lutyens's work at the Hampstead Garden Suburb, with which his association began in 1908, something should be said concerning the 'Garden City' movement[17] in general. In 1892 Ebenezer Howard[18] (1850–1928) published *Tomorrow. A Peaceful Path to Reform*, better known by the title of the edition of 1902 as *Garden Cities of Tomorrow*. Howard's opportunity to realize his aspirations for a new sort of town began with the acquisition of land at Letchworth in 1903, but the construction of the Letchworth Garden City on the plans of Sir Raymond Unwin (1863–1940) and his partner Richard Barry Parker actually post-dates their work at the Hampstead Garden Suburb. They had, however, already laid out a 'model village' for a chocolate manufacturer at New Earswick near York in 1904.

In 1907 Dame Henrietta Barnett set out to realize some aspects of the Garden City ideal on the outskirts of London. The next year land was acquired near Golders Green on the far side of Hampstead Heath and the suburb planned as a whole by Parker & Unwin.[19] Lutyens was invited to plan and design the group of public buildings in the centre and their immediate setting (Figure 54). This town centre was eventually largely completed, most of it from Lutyens's design, and the two churches, with the contiguous squares, provide some of his finest work. His work here certainly set a pace of coherence and urbanity that was unfortunately not maintained in later Garden Cities such as Welwyn, begun in 1919, that followed the rather more diffuse plan of Letchworth.

Welwyn, however, is of importance in the history of town-planning because it was not merely a residential development but included from the first an industrial estate as well. Thus it was a more complete entity and the prototype of the English 'New Towns' initiated after the Second World War. The Barnett project was originally, and has remained, an upper-middle-class suburb; yet it is unique for the orderliness and the distinction of the public buildings that Lutyens provided at the centre and the terrace-framed squares that flank them.

St Jude's, the Anglican church, begun in 1910 and not finally completed at the west end until 1933, is Lutyens's principal ecclesiastical work, his Catholic cathedral in Liverpool having been barely begun before his death. Lacking the emotional drama of the Scandinavian churches of its period, St Jude's has nevertheless a certain real boldness of silhouette, produced by rather eclectic means, and an elegance of craftsmanship in the brickwork that is in the finest tradition of the Gothic Revival. Yet, being by Lutyens, it is hardly at all medieval. The tall crossing tower may have slight suggestions of the Norman in its detailing and a cathedral-like scale, but in general the exterior is in a vaguely seventeenth-century vernacular descending from the later work of Shaw and Webb.

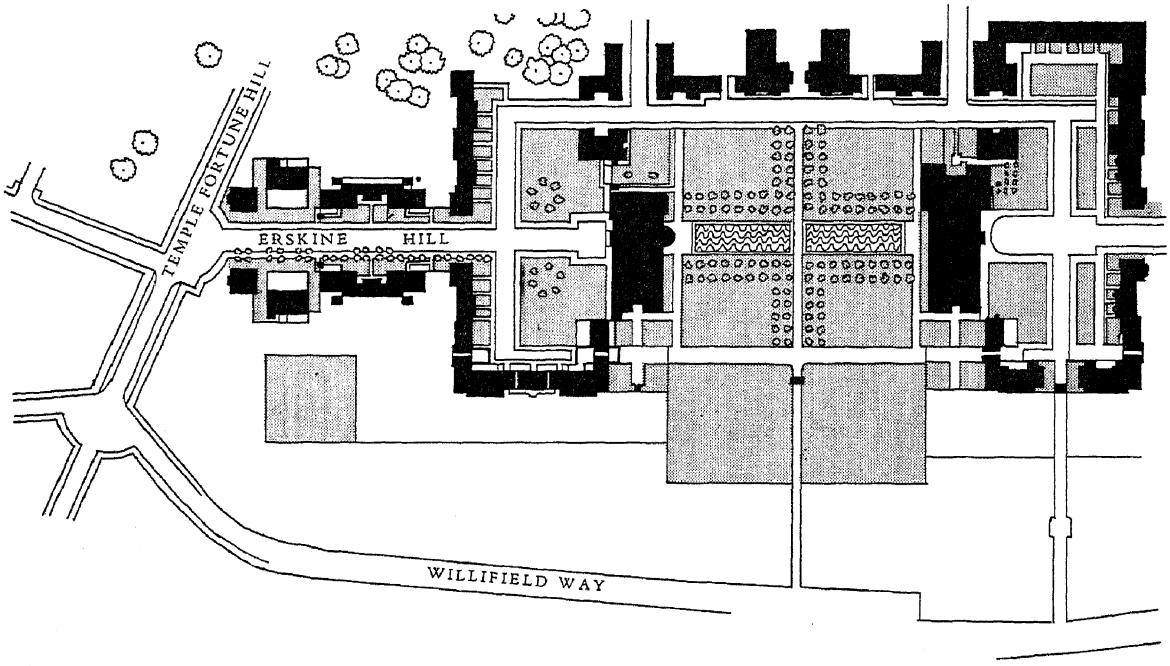


Figure 54. Sir Edwin Lutyens: Hampstead Garden Suburb, London, North and South Squares, 1908

The interior, rather surprisingly, proves to be almost High Renaissance in character; there is even a barrel vault over the nave. On the other hand, the timber-work of the roofs of the aisles, which descend so low on either side, is of a structural peculiarity recalling Webb at his crankiest if not, indeed, Butterfield. Except for the highly exceptional London church of the Holy Redeemer, Clerkenwell, built by J. D. Sedding (1837–91) in 1887–8, so truly Palladian – rather than Anglo-Palladian – internally as almost to persuade one that it is Italian, no non-Gothic church of this quality had been built in England for two generations. Lutyens's more modest Free Church is rather similar, both inside and out, but considerably less effective.

To surround two sides of both North Square and South Square beside the churches Lutyens revived the Early Georgian terrace, varying the composition ingeniously and handling the beautifully laid bricks in two colours, reddish and greyish, with a fascinating subtlety. Unfortunately such truly urban housing stood no chance with the clientèle

drawn to this and other Garden Cities as against the appeal of free-standing or semi-detached houses. No general revival of the terrace occurred. But Parker & Unwin and their emulators achieved in individual houses a standard of semi-traditional suavity that represents one of the principal English achievements of the period, and something frequently imitated abroad.

Lutyens's call to lay out New Delhi as the capital of India followed in 1911, and the first plans were made before 1914. It was a commission better suited to his leaping imagination than the modest domesticity of an English Garden City. Construction of the buildings, notably the enormous Viceroy's House, began only in 1920.[20] Not since L'Enfant laid out Washington had a fiat city of such amplitude and grandeur been conceived, much less even partly executed. The Viceroy's House, finally finished in 1931, is official residence, centre of administration, and focus of the whole scheme – a *tour de force* for which, from the Queen Anne, the Neo-Georgian, and the Palladian, Lutyens lifted his sights to a Roman scale (Plate 181). The result is grand and broad, adapted to the climate, and even reminiscent of the Indian architectural past in some of its forms and features. Towards the designing of such a major monument generations of Frenchmen and others who studied at the Beaux-Arts had been prepared; there is a certain irony that this opportunity came to an Englishman, trained in the most individualistic and private English way.

Nashdom and Great Maytham represent a side of Lutyens's mature talent that follows rather directly from Webb's Smeaton Manor of the seventies (Plate 102A). The work at the Hampstead Garden Suburb, and above all that at Delhi, represents another side. On the one side he had a few worthy rivals : Leonard A. S. Stokes (1858–1925) [21] was a more adventurous architect than he around 1900, with some leaning towards the Art Nouveau; Shaw's pupil Newton was almost as competent at Neo-Georgian work. Those who tried to rival him on the other side, however, Sir Reginald Blomfield (1856–1942), a pupil of Norman Shaw, and Sir Herbert Baker (1862–1946), a pupil of Ernest George, hardly deserve mention, even though their work bulks very large on the London scene.

Blomfield's watered-down version of Shaw's quadrant façade of the Piccadilly Hotel, carried out in the twenties, has been mentioned. Better examples of what may be called in W. S. Gilbert's terms his 'not too French, French' academicism face Piccadilly Circus. But his pretensions to cosmopolitanism, although based on a very considerable knowledge of French seventeenth- and eighteenth-century architecture, did not serve him as well as Lutyens's purely English background in continuing along the 'Monumental Queen Anne' line of Shaw's late work.

Baker's outrageous rape of Soane's masterpiece, the Bank of England, carried out over the years 1921–37, has also been mentioned; it was literally a fate worse than death. Despite a half-hearted decision to preserve a good deal of the relatively unimportant exterior, the Tivoli Corner was pointlessly stripped of its idiosyncratic crown, presumably in the name of Baker's superior 'taste'. His South Africa House of 1935, moreover, all but ruins Trafalgar Square.

Lutyens's Midland Bank of 1924, near the Bank of England in Poultry, like Baker's

bank almost a skyscraper in size if not in height, at least required the destruction of no earlier work of distinction and is undoubtedly more consistently and personally designed. Yet the cliff-like massiveness of its walls, with even less evidence of the underlying structural skeleton than in office buildings of this period by American architects, is almost as anti-urbanistic as Baker's Bank of England. Because of the very narrow streets of the area, the filling up of the City of London with such structures, very few of them even of this degree of intrinsic interest, was a tragedy of the twenties that even bombing did not put right. The superiority of Corbett's Bush House, not in the rather flat detailing but in the exploitation of the fine site at the foot of Kingsway, and even in the politeness of the plain foil it offers to the Baroque elaboration of Gibbs's St Mary-le-Strand, is very notable.

Lutyens's other big Midland Bank buildings, one of 1928 in Leadenhall Street in the City and one of 1929 in King Street in Manchester, are not much of an improvement over that in Poultry. However, his elegant little Midland Bank of 1922 in Piccadilly in front of Wren's St James's, a rich and inventive exercise in the vein of Wren built of brick and stone, puts to shame the Rectory that Sir Albert Richardson, P.P.R.A. (b. 1880), a later traditionalist, built in 1956–7 at the other end of the church.

Lutyens's most successful big business building is doubtless Britannic House of 1924–7. This profits from its site between Finsbury Circus and Moorgate Street, the curve of the Circus giving to the eastern front a certain major Baroque drama that is echoed in the versatile play with seventeenth–eighteenth-century motifs in the detailing. But one may well prefer the massively mock-Egyptian effect of Adelaide House by London Bridge, built by Sir John Burnet & Tait in 1924–5. This, at least, makes some approach to the new ideals of the Continent in these years. Burnet, moreover, had been for decades one of the most competent British practitioners in a local version of the international Beaux-Arts mode, as his King Edward VII wing of the British Museum of 1904 notably illustrates. Three years later Tait was the first English-born architect [22] to attempt to build in the International Style, as has been mentioned earlier. The closest Lutyens came to the Continental modes of the twenties was in his public housing.

Public housing in England between the wars was generally rather routine in design despite the statistical importance of its social achievement, lacking either the drama of the Dutch or the restraint of the Scandinavians. On the one occasion when Lutyens turned his attention to this field, on the Grosvenor Estate in Westminster in 1928, he succeeded beyond all expectation. The bold device of chequering all the façades of his blocks of flats in alternate oblongs of brickwork, plain stucco panels, and windows is somewhat inhuman in scale but notably effective. The contrast is striking to the work of the twenties by the London County Council Architect's Office. In that a type of design not unsuited to semi-detached houses in middle-class suburbs was spread thin over vast many-storeyed masses.

Lutyens, one feels, in a different time and place – a generation earlier in England, say, or a generation later – might have been a greater architect. But even as his career actually worked out, he is not unworthy to occupy the place given him here as the 'last traditionalist'. Since his death there has not been, either in England or elsewhere, any

traditional or even semi-traditional building of consequence, unless one wishes to consider Perret's work at Le Havre in the latter category.

The traditional architecture of the first third of the twentieth century in Italy and France, headquarters in so many ways of the major architectural traditions of the western world, is disappointing beside that of the countries discussed so far. In the case of France, the situation is confused by the modulation of Perret's style towards a semi-traditional Classicism which, by the thirties, official and academic taste was ready to meet half-way. In Italy Marcello Piacentini (b. 1881), the son of the architect of the Academy of Fine Arts in the Via Nazionale in Rome, has always had more vitality than the French of his generation other than Perret. From the new *città bassa* of Bergamo, for which he won the competition in 1907 and which was executed in 1922–4, through his general responsibility for the *Terza Roma*, Mussolini's vast project for a new capital between old Rome and Ostia which was to have opened with an exhibition in 1942, there is a certain assurance and amplitude of scale lacking in most contemporary work in France. Mussolini, in the middle years of Fascism, was not averse to modern architecture, as we have seen. When, under German influence, he began to turn against the International Style the choice of Piacentini to set a neo-imperial pace was as natural as Hitler's return to the modes of twenty years earlier in Germany. Moreover, from the public buildings of Bergamo through the 'New Towns' below Rome – Littoria, Sabaudia, Pontinia, etc., mostly destroyed during the Second World War – to the final nonsense of La Padulla's Palace of Italian Civilization at the *Terza Roma*, nicknamed by the Italians the 'Square Colosseum', fine materials, clean if familiar proportions, and an excellent craftsmanship provide certain lasting qualities not unworthy of Italian national traditions. Where Fascist work is interpolated in an earlier urbanistic scheme, as along the Via Roma in Turin between the Piazza San Carlo and the Piazza Carlo Felice, the new buildings of 1938 – here by Piacentini – fit as well with the seventeenth-century buildings of the one as with the nineteenth-century ones of the other. For all their obviousness, moreover, the colonnades of the Via Roma, all of polished granite monoliths, have a truly Roman scale and dignity. Even the Square Colosseum has a Chirico-like obsessive force, like something out of a dream; while the big unfinished structures around it are almost equally appropriate to that megalomaniac political dream of *imperium* from which Italy has since so happily reawakened to new and creative life.

To pursue the subject of traditional architecture further would be merely to explore what can now be seen to have been not so much a cul-de-sac as a road without a goal. The standards of traditionalism – standards of 'taste', of 'literacy', of ingenious adaptation – were still on the whole nineteenth-century ones. Yet down into the thirties, traditional buildings were the big trees in the forest of twentieth-century architecture; with the rise of a new range of giants in the forest, the seedlings from which they grew seem now to have been more significant: Asplund's Stockholm Exhibition of 1930 and his Crematorium there of 1935–40 tend to obscure our vision of his earlier Library, although that is perhaps finer considered absolutely. So also the Philadelphia Savings Fund Society skyscraper of 1932, so clearly the immediate ancestor of those built in the last decade, draws attention away from the Woolworth Building. In England continuity

has been so completely broken that it is hard to realize how much the 'Mannerist' façade-treatment of Drake & Lasdun's tall housing slabs of 1946–56 on the Paddington Estate has in common with Lutyens's chequered Grosvenor Estate blocks of thirty years ago. However the future may evaluate the achievements of the traditional architects of the early twentieth century, the chapter is now closed.

CHAPTER 25

ARCHITECTURE IN THE NINETEEN-FIFTIES

To describe the state of architecture in the western world in this present decade, following on the mid-point of the twentieth century, is far more difficult than to sketch its condition a hundred and fifty years earlier, as the first chapter of this book attempted. Today the western world is enormously larger in geographical extent, vastly more populous, and as a result very much more productive of buildings of all types and at all levels of quality. Many of the types most important in the twentieth century – big business buildings, low-cost public housing, facilities for transportation like railway stations and airports – did not exist in 1800. Such difficulties are objective and merely imply that the sampling of current executed work must be relatively much more limited. But the very limited selection provided here is inevitably influenced by subjective criteria. The activity of two generations of historians writing on the architecture of the early nineteenth century has produced something approaching a consensus of opinion as to what is and what is not important or characteristic in that period. There remains, of course, much to be discovered concerning building in the decades around 1800, particularly as interest rises in the technical aspects of the story; yet the engineers[1] are unlikely ever to force the Soanes and the Schinkels out of the centre of the picture: moreover, men like Latrobe and Mills were themselves as much engineers as architects.

Already, in carrying the story of the production of the leading architects of the first and second generations of modern architecture down to the present, a certain special emphasis has been given to their work in the production of the last few years. The decisions as to what to include in rounding out the picture are critical ones hardly comparable to the relatively objective historical process of selection that controls in the First and Second Parts of this book. The very extent in time of what should be considered 'the present' is a subjective matter. I have known American architectural students whose present was so limited that they had never heard of Perret! To anyone under thirty the effective present will hardly extend backward more than five or ten years. To a very large extent it is such a 'young man's present' that provides the chronological frame of reference for this chapter.

In most countries of the western world the Second World War occasioned a hiatus in construction that lasted nearly a full decade from the slowing down that came with Munich in the late thirties to the general revival of building activity in the late forties. There is therefore a real lack of continuity between pre-war and post-war building except in those countries that remained neutral. But just as the break in the continuity of building production around 1800 resulting from the Napoleonic Wars was a limited, not an absolute, phenomenon, since the truly revolutionary developments in architecture preceded rather than followed its onset, so there is in the present post-war period very little to be recognized as yet which did not have its beginnings well before 1939.

The perspective of the war has already flattened out some of the architectural episodes that seemed significant in the mid thirties, not alone the Nazi and late Fascist reaction but such minor symptoms of dissatisfaction with the general line that architectural development had taken internationally since the early twenties as the rise of the Bay Region School [2] in America and of the New Empiricism in Europe. Historians of the future will know how much weight to give to these matters. Now that they have lost the topicality of current events they seem no more and no less significant than the rather similar critical flurries that came later concerning *architettura organica* and the 'New Brutalism'.[3] Such flurries cannot be entirely ignored; [4] yet the general emendation of the rigid doctrines of the 'International Style' is more strikingly illustrated by the current high esteem of Wright's continued production and, *a fortiori*, by the warm critical reception of Le Corbusier's very aberrant church at Ronchamp than by any of the buildings that illustrate the schismatic reactions of the last twenty-five years. The accepted definitions of modern architecture are undoubtedly much looser today than in the early thirties, partly as a result of various abortive attempts at more thoroughgoing revolt. But the greatest individualists are, paradoxically, not young men [5] in their thirties, but the older masters who are in their late sixties, seventies, and eighties.

The greatest change in the post-war architectural scene, a change that began gradually during the pre-war years, is the shift in the geographical pattern. No longer do France, Germany, and Holland occupy the centre of the stage. The rise of the United States to great prominence, continuing a development already begun in the 1870s, is not surprising. Far more surprising is the rise in the importance of Italy, not only because of her actual achievement, unequalled perhaps since the eighteenth century, but as a major international influence. This was presaged by the work of Terragni and of Figini & Pollini in the mid thirties and was hardly inhibited by the ambiguities of the later Fascist attitude towards architecture just before the Second World War. The post-war British achievement has been more canalized; yet it is of an autochthonous character which a long-term consideration of English architectural abilities and disabilities makes more intelligible than that flurry of new ideas, so largely of foreign origin, characterizing the mid thirties in England.

The Scandinavian countries retain their position of prominence but not pre-eminence in the international architectural scene. In contrast to their long-recognized virtues, some rather less relevant today than they once were, must be set the very different contribution of the Latin American countries, whose entry on the international scene all but post-dates the war. Production there was hardly worth mentioning a hundred and fifty years ago; today Brazil, Mexico, Colombia, and Venezuela contribute on a par, both in quantity and in quality, with older and once richer countries. Moreover, while the West has more and more been losing political control of Africa and Asia, its cultural influence on those continents has not necessarily declined, indeed as regards architecture it has probably increased. Modern architecture, developed to utilize to the full the most advanced technologies, serves well also, it is interesting to note, in areas where technology is least advanced. Indeed, the most characteristic building material of modern archi-

tecture, ferro-concrete, is often exploited most ingeniously in countries where materials are dear and labour cheap.

Not only do many outlying parts of the world import architects along with other technicians from the West; Japan, which lay entirely outside the field of western culture a century and a half ago, has developed her own school of modern architects. Various Dominions and dependencies – South Africa, Australia, Puerto Rico, for example – likewise have active groups of local practitioners operating in close consort of principle with those of Europe and North America.

With so large a range of current activity, no continent-by-continent, much less country-by-country, survey of modern architecture is possible in a single short chapter. Even allowing for all the enormous climatic and cultural differences that still affect architectural production, there is sufficient identity of principle in architecture today throughout the western world to justify an international consideration of post-war achievement in terms of various building types, moving from the macrocosm down to the microcosm – from the whole city as a planned product of architectural design to the individual dwelling-house.

Despite its vast productive capacity, the western world in the mid twentieth century has so far created rather fewer urban entities of distinction than did the nineteenth. Partly, this is because the building of cities is necessarily a slower process than the building of individual structures, even in an age when there are many fiat towns and also much concerted rebuilding of older cities partially cleared by bombing in the Second World War. Even more, perhaps, it is because it takes far longer for the 'planning' ideals of architects in any period to achieve a degree of public acceptance sufficient to ensure over decades proper control of layout and construction – or reconstruction – of whole cities than to find clients, even governmental clients, for single buildings or for extensive, but piecemeal, social projects.

Perret's Le Havre (Plate 140A) has earlier been characterized as the realization – notable even if belated – of ideals that date back before the First World War. The post-war 'New Towns' of England are none of them yet sufficiently complete to be apprehensible as total urban entities; for the most part they are still only large-scale housing developments – suburbs in search of a city, so to say – realizing at a considerably lower economic level the ideals of the Garden Cities of fifty years ago. Better than the English examples and indicative of the widespread acceptance of Garden-City ideals is Vållingby in Sweden.

More complete urban entities of the mid century can already be seen in such heavily bombed and largely rebuilt cities as Coventry in England or Hanover in Germany; yet in neither case is the architectural achievement of the highest contemporary order. They should be compared for quality with Napoleon III's Paris or Francis Joseph's Vienna rather than with Alexander I's Petersburg or Ludwig I's Munich, and even that comparison will not be very favourable.

In the extensive and almost explosive expansion and reconstruction of various Latin American cities it is only in Caracas that the planner Maurice Rotival is able to keep a bit ahead of the builders. But even Caracas has as yet only samples of the characteristic new

urbanism of the mid twentieth century: two or three isolated skyscrapers and a housing development, the Cerro Piloto, differing from those in other parts of the world chiefly by its very great extent and its superb mountain-backed site (Plate 187A). The North American cities that have been growing fastest, Houston or Los Angeles or Miami Beach or Toronto in Canada, are at least as chaotic as the Latin American ones, and neither the quantity nor the quality of the individual buildings is as high. Against the eruptive growth of a city like São Paulo in Brazil may be better balanced such a North American programme of large-scale rebuilding as that which has already cleared the Golden Triangle in Pittsburgh, replacing typical nineteenth-century urban congestion with an open park and spaced cruciform skyscrapers. (The new capital of Brazil, Brasilia, was planned on paper by Lúcio Costa only in 1957, but construction is already under way.)

The mid twentieth century has as yet no full-scale cities that properly exemplify the highest ideals of modern architects. We must wait, with fingers crossed, even to see the results of such piecemeal projects of reconstruction as that proposed by Sir William Holford for the bombed district around St Paul's Cathedral in London,[6] and still longer for such complete cities as Chandigarh and Brasilia where the public buildings, by Le Corbusier and by Niemeyer respectively, are rising first. There are in existence already certain special entities of almost urban scale planned since the Second World War that deserve attention. Notable are the 'university cities', complete educational plants located on new terrain, planned as a whole and designed as regards their individual buildings either by a single team of architects or by several teams whose work has been closely co-ordinated from start to finish. The most remarkable of these is that of the University of Mexico, but even here the difference in quality between such highly original structures as the Olympic Stadium of Augusto Perez Palacios (b. 1909), Raúl Salinas Moro, and Jorge Bravo Jiménez of 1951–2, with its fine relief mosaic by Diego Rivera, or the Central Library of Juan O'Gorman, Gustavo Saavedra, and Juan Martinez de Velasco of 1951–3, with its stack tower entirely covered with mosaics designed by O'Gorman, and certain of the other equally large and prominent buildings is very notable (Plate 184). The university city of Rio de Janeiro, for which Le Corbusier was originally called to Brazil to provide a plan in 1936, is by no means so far advanced as that in Mexico; but the control of the design of all the principal buildings by one architect, Jorge Moreira (b. 1904), who is one of the three or four ablest in Brazil, promises a homogeneity of character and a distinction of finish unique in this field. Among several other Latin American examples begun and partly built, that at Caracas by Carlos Raúl Villanueva (b. 1900) rivals in its principal building, the Aula Magna of 1952–3 with its extraordinary acoustic ceiling by the technician Robert Newman and the sculptor Sandy Calder, the achievements of the Mexicans and the Brazilians.

Of a very different character indeed, and initiated much earlier, is the University of Aarhus [7] in Denmark for which Kay Fisker, C. F. Møller (b. 1898), and Povl Stegmann (1888–1944) won the competition in 1931 (Plate 185). Some of its buildings date from before the Second World War: professors' houses of 1933, student residences of 1934, museum of natural history of 1937–8; while most of the class-room buildings were actually erected in the war years 1942–6. The work continues in the hands of Møller,

and the layout of the beautiful sloping site is by C. Th. Sørenson (b. 1893). Built of buff brick with tile roofs of medium pitch, the general effect is much quieter than that of the Latin American university cities with their tall ferro-concrete buildings, crisply shaped and distinguished both by a bold use of colour and the conspicuous incorporation of work by distinguished painters and sculptors. At first sight – and to the prejudiced – the University of Aarhus may appear more conservative; but the range of the new architecture is recognized today as being wider than it was twenty-five years ago, and Møller's *aula* in its very different way is quite as advanced as Villanueva's; or, for that matter, as the shell-domed auditorium of 1952–5 at the Massachusetts Institute of Technology in Cambridge, Mass., by Eero Saarinen (b. 1910).

One of the earliest individual building types to find wholly untraditional expression was the large block of offices. The skyscraper reached maturity early in the hands of Sullivan in Chicago; the later vagaries of the form in New York did not recommend it to European emulation, although skyscraper projects by Mies, by Gropius, and by Le Corbusier were among the most notable early evidences of the birth – on paper – of a new architecture in the years 1919–22. Howe & Lescaze's Philadelphia Savings Fund Society Building of a decade later was the first large-scale example of the acceptance in America of the new architecture of Europe; but during the thirties skyscraper-building languished, and many critics thought that their day was already over. In many parts of the world that day has yet to dawn, and Europe still has very few notable examples to offer, but in the New World the fifties have seen a new wave of skyscraper building by no means confined to the United States. For the first time since the nineties a considerable number of really distinguished examples have been built in both North and South American cities. Wright's Price Tower at Bartlesville, Okla., a relatively modest one, and Mies and Johnson's Seagram Building in New York have both been mentioned already. Diagonally across Park Avenue in New York from the site of the Seagram tower stands the other most notable post-war skyscraper in New York, Lever House, designed by Gordon Bunshaft (b. 1909) of the Skidmore, Owings & Merrill firm and built in 1952 (Plate 191). The almost completely glazed curtain-walls of the east and west sides of the United Nations Secretariat in New York – completed in 1950 by Wallace K. Harrison (b. 1895) and his partner Max Abramowitz (b. 1908) but incorporating ideas provided by an international panel of which Le Corbusier and Niemeyer were members – are carried round three sides of Bunshaft's slab. More significant, however, is the fact that this slab, rising like the isolated United Nations building with no setbacks, covers only a portion of the available site. Thus it stands in its own envelope of space carved, as it were, out of the solid canyon of Park Avenue, just as Mies and Johnson have since set back their building 100 feet from the avenue and well in from both the side streets also. Their 'plaza' is unconfined; Bunshaft's open space is defined by a mezzanine on *pilotis* carried round an unroofed court.

Reacting against the almost totally glazed curtain-wall of his U.N. Secretariat, a type of sheathing for large urban structures already spreading rapidly to other countries, Harrison on the Alcoa Building of 1952 in Pittsburgh used storey-high panels of aluminium cut by relatively small windows. This alternative type of sheathing has been much

exploited since, with the use of panels both of aluminium and of stainless steel. There is a curious revival of Expressionist feeling in the complex angular design of the glazed lobby of the Alcoa Building that contrasts sharply with the paradigmatic expression of the 'International Style' seen in the Equitable Building in Portland, Ore., of 1948 by Pietro Belluschi (b. 1899), the first of the interesting post-war skyscrapers. A later Western skyscraper, the Mile-High Center in Denver, Col., completed by I. M. Pei (b. 1907) in 1955, is extremely Miesian, following more closely the formula of his Lake Shore Drive Apartments in Chicago than he did himself in the design of the Seagram Building.

It is invidious to mention only these few North American examples, but production of similar skyscrapers is so nation-wide in the United States and also in Canada that one can hardly hope to see the individual trees for the forest. There are good reasons why those selected for illustration or mention are likely to remain conspicuous and not be lost in the crowd. But skyscrapers are no longer a prerogative of North America; some of the finest are rising today in Latin America (Plate 192), and these may before long be rivalled by European examples already projected or under construction.

It is a mistake to assume that North Americans house business only in skyscrapers. More and more large corporations are moving their headquarters to the open country. Quite as significant as Lever House in the Bunshaft-designed production of Skidmore, Owings & Merrill is the 700-foot-square but only four-storeyed office plant of the Connecticut General Insurance Company of 1955–7, set in a park of eighteenth-century size and amenity at Bloomfield, Conn., some ten miles outside Hartford, the insurance capital. Luxury of materials, white marble and granite as well as aluminium, makes up somewhat for the rigid asceticism of the standardized walls, while four interior court gardens by Noguchi and three pink granite figures by him on the slope beyond the 'artificial water' in which swans swim about below the all-glass cafeteria further balance the expression of crisp efficiency with something warmer and more humane.

In most Latin American cities all-glass walls are impractical because of the heat and the glare of the sun. As a result, architects have developed various versions of the sun-break system introduced twenty years ago on the first tall modern building to be erected in that part of the world, the Ministry of Education in Rio; glazed curtain-walls are by no means unknown, however. The egg-crate sun-breaks of the Edificio C.B.I. of 1948–51 in São Paulo by Lucjan Korngold (b. 1897) and the horizontally patterned grid of the Retiro Odontológico of 1953–4 in Havana by Antonio Quintana Simonetti and Manuel A. Rubio give these buildings a very different look from such examples of more North American character as the building in the Calle de Niza at the corner of the Calle de Londres in Mexico City of 1952–3 by Juan Sordo Madaleno (b. 1916), or that of the Suramericana de Seguros in the Avenida Jiménez de Quesada in Bogotá of 1954 by Cuéllar, Serrano, Gomez and Co.

The most ingenious and best designed Latin American skyscraper, however, is the completely isolated Edificio Polar of 1953–4 at the Plaza Venezuela in Caracas (Plate 192). This was built by Martin Vegas Pacheco (b. 1926), a pupil of Mies at the Illinois Institute of Technology, and his partner José Miguel Galia, a pupil of the one distinguished South American architect of the first modern generation, Julio Vilamajó, at

the University of Montevideo. Here the structure has been reduced to four ferro-concrete piers from which the curtain-walls are cantilevered out 11 feet on all four sides. The curtain-walls have a varied infilling, part solid sandwiches of plywood and aluminium sheeting, part louvres that transmit air but not light, and part glass. These are combined in different proportions on each side according to the orientation in order to control the glare and the heat of the sun while providing direct ventilation. Since this tower is isolated, it needs no envelope of space; in fact, however, the wider mezzanine extending under the base of the tower does provide this. The two open storeys, one at ground level and one above the mezzanine, give a lightness of effect and a frank view of the essential structure that is even more striking than at Lever House, where the relation of the towering slab to the mezzanine is less skilfully handled.

European skyscrapers [8] rarely rival those of North America in height, and few large urban office buildings reach even the median level of quality of those in Latin America. In rebuilding bombed cities, however, there are opportunities that can readily be exploited for carrying certain buildings very high over a portion only of their sites, as was first done in North America at Lever House, but using the ampler spaces provided by the replanning of the cities to extend lower blocks from the main slab. One of the best examples of this treatment is the Continental Rubber Building of 1952–3 in Hanover by Werner Dierschke and Ernst Zinsser, which replaces Behrens's ponderous block of thirty years earlier that was destroyed in the war. The surfacing materials, mostly various stones, are serviceable and the general composition well studied, but the proportions lack the elegant lightness of the Edificio Polar. Yet the whole achieves a 'reality' of effect lacking in the C.B.I. in São Paulo, which looks, despite its great size, rather like a cardboard model; or Lever House, which too much resembles a slick cellophane-wrapped package. Post-war German commercial work at smaller scale is more refined, as, for example, the Haus der Glas-Industrie of 1951 at Düsseldorf by Bernhard Pfau and Pempelfort Haus there of 1954 by Hentrich & Petschnigg, or the Burda-Moden Building of the same date in Offenburg by Egon Eiermann. Hentrich & Petschnigg are also responsible for the striking BASF skyscraper at Ludwigshafen, probably the tallest yet built in the Old World.

Post-war Italian commercial work is more varied and imaginative than in other countries, but the tallest examples have not so far been the best. Very often it is the fine marble or mosaic surfacing – echoed in the BASF – and the high quality of the craftsmanship that give them special interest and an effect of luxury rarely found in other countries, rather than real distinction of design. Interestingly enough, since post-war Latin America has tended to follow Italian models, one of the best Italian buildings of this decade, the Olivetti offices in Milan of 1954–5 by G. A. Bernasconi, Annibale Fiocchi (b. 1915), and M. Nizzoli, has a very Latin American air because of its prominent sun-breaks. This was one of the few buildings premiated by the international jury at the São Paulo Biennal in 1957, and the only non-Brazilian one.

Industrial construction has not even yet been as fully accepted into the realm of architecture as has commercial building for the last hundred years. Ever since the factories of Behrens and the warehouses of Perret, however, industrial commissions have played an

increasingly important part in modern architectural production. Probably the largest acreage of good factory-building since the war, as earlier in the century, has been in North America. With rising standards of amenity, moreover, and the substitution of road haulage for rail transportation, factories have come out from behind the railway tracks and taken their proper place visually as well as functionally, with well-maintained grounds as important features, in regional planning. It is hard to single out particular factories for mention, if only because their design, whether it is by engineers or by specialist architectural firms like Albert Kahn, Inc., has arrived at a largely anonymous standardization – the fate, incidentally, towards which some critics see all twentieth-century architecture as inevitably moving.

The General Motors Technical Institute at Warren, Mich., completed by Eero Saarinen in 1955 after a decade of planning and construction, is almost more comparable in scale and complexity to a university city than to a factory; yet this group of twenty-five buildings organized round a large rectangular artificial lake is also in its use and in its character a major example of American industrial building raised at the behest of a corporate client into the realm of distinguished architecture (Plate 188; Figure 55). Little or no link remains between this and even the latest buildings designed by Eliel Saarinen on which his son collaborated, although the former was involved in this commission down to his death in 1950. Instead, the influence of Mies is very strong, since in the younger Saarinen's estimation the Miesian discipline is especially suitable for giving order to such a project, in terms both of over-all planning and of the characteristic structural vocabulary of curtain-walling. Yet the necessary variety of size and shape of the buildings, determined in part by the very different activities that they house, from power-houses and engine-test cells to the Styling Centre for new motor-car models, made impossible the imposition of so classic a pattern as Mies has aimed to produce at the Illinois Institute of Technology (Figure 52). In conscious avoidance of the monotony of the motor-car factories around Detroit, which run on without modification for thousands of feet, and in pursuit of ideals which most modern planners have realized only on paper, Eero Saarinen accented his long lake-front with a water-tower all of stainless steel rising out of the water and provided a special domed unit at the south end to house the display of new models beside the one section of the complex to which the outside world has some access. Moreover, he varied the characteristic metal-and-glass vocabulary of the façades – the metal in general black oxidized aluminium, the glass greenish in tone to reduce glare in the interiors – with solid walls of glazed brick in various brilliant colours, almost rivalling the Mexicans in the intensity of the reds, blues, yellows, and greens he has chosen. As with the later Connecticut General plant, sculpture of distinction, here by Antoine Pevsner, provides a note of humane interest amid all the expression of mechanistic efficiency.

In Europe the Olivetti Company are more consistent patrons of distinguished design in architecture than General Motors. The main plant at Ivrea, designed by Figini & Pollini, is small by American standards, and has been in existence for some time – since 1942. It is chiefly notable today because it is the heart, as it is the *raison d'être*, of an architectural programme of almost urbanistic scope at Ivrea that is still in process of

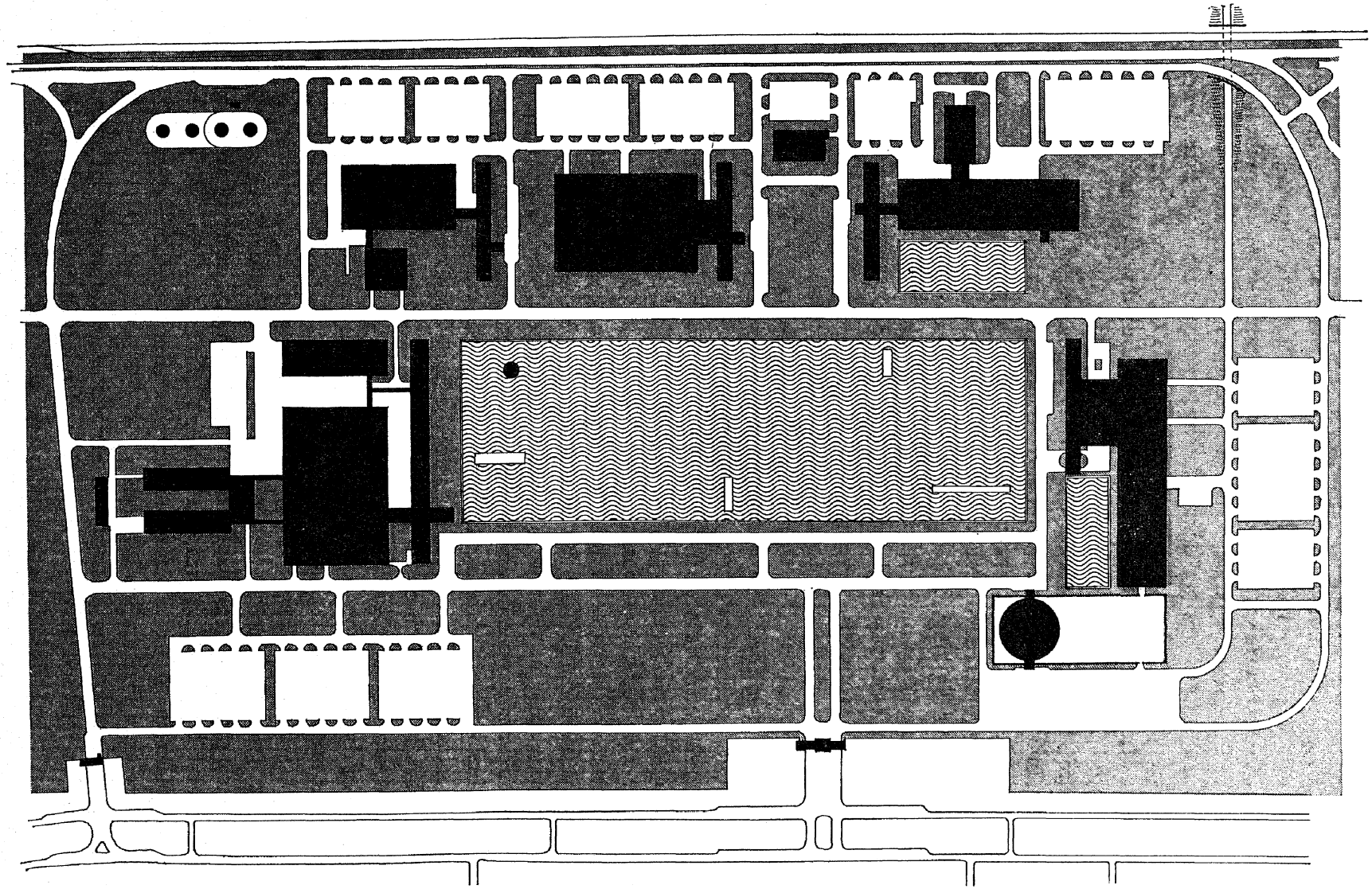


Figure 55. Saarinen & Saarinen: Warren, Mich., General Motors Technical Institute, 1946–55, layout

realization by Figini & Pollini and by the resident architect Fiocchi, whose small foundry of 1954–5 is an exemplary industrial unit of almost Miesian elegance. Characteristic now of most Latin countries are the sun-breaks on the south-west side of the large Ivrea factory; while the north-east façade rises four storeys in sheer glass like a vast extension of Gropius's studio block at the Bauhaus. Of the present period of the fifties, and better sited, more articulated, and more self-complete, is the later Olivetti factory at Pozzuoli near Naples by Luigi Cosenza. Structurally, however, the industrial work of the engineer Nervi is more original.

Factories are still more likely to be designed by engineers than by architects; but the contribution of engineers to their design is by no means always standardized and monotonous. Particularly in those countries where the lack of steel encourages the use of ferro-concrete, engineers have devised notably imaginative solutions to the problems of space-coverage and lighting. The Spanish-born engineer Candela in Mexico works with ferro-concrete vaults in industrial construction with the casual ease and *ad hoc* ingenuity of a twelfth-century Frenchman building in stone; while his church of Nuestra Señora de los Milagros of 1953–5 gives the impression of being a reversion to Expressionism, despite the unassailable mathematical and structural logic of the hyperbolic paraboloid forms of its 'ruled surfaces'. The Italian-born José Delpini, in such factories as his S.I.T. Spinning Shed of 1949–50 at Pilar in Argentina, easily rivals the work of the leading modern architects of Argentina in the distinction as in the scale of his buildings. The Danish-born Ore Arup in England, working with the Architects Co-Partnership on the artificial rubber factory at Bryn Mawr in Wales, provided one of the most notable large-scale buildings in post-war Great Britain, and deserves much of the credit for it. To return to the work of architects, it should be noted that in England, where most post-war industrial building has been modest in size, the power-stations of Farmer & Dark, culminating in that of 1955–7 at Marchwood, have a grandeur of scale and a logic of partially open design that ordinary factories can almost never rival.

Industrial building, still at the frontier of architecture despite the great contribution it has made to more general developments since the English mills of the 1790s, is notably international in its twentieth-century standards and its achievements. The leading industrial firms, such as Albert Kahn, Inc., and that of Frankland Dark are asked to build in many parts of the world, for the traditions of the old-established technologies are of especial value in such work. The continued existence of cultural empires, so to call them, is still made manifest when English firms build power-houses and factories in the Middle and Far East. James Cubitt & Partners[9] have completed in Rangoon, for example, a pharmaceutical plant that is probably the largest post-war factory of architectural interest to be built by an English firm, just as their Technical College at Kumasi in Ghana partly completed in 1955 is a more considerable example of a mid-twentieth-century university city than England has yet seen.

The provision of housing by organs of the State is today recognized almost everywhere as an essential social service, quite as modern architects have always insisted it should be. Le Corbusier's Unité at Marseilles is doubtless the most striking single example of the tall structures, slabs or 'point-blocks', which are increasingly the characteristic

form of such housing, but the most notable general programmes of production are found in England, in certain Latin American countries, and in Denmark and Sweden. The pressure of population-growth and the need for rebuilding after war-time destruction motivate such programmes almost everywhere, but in several countries notable otherwise for the high standard of their current architecture – the United States and Italy, for example – the results have so far been disappointing. A strong social tradition of public housing, moreover, as in Holland, even with the precedent there of the notably fine work of thirty and forty years ago, seems to be no guarantee of continued excellence in this field. Although the rising popularity of housing in tall structures is still balanced in England by a strong attachment to small houses built in pairs or in terraces, such as comprise the greater part of the New Towns, present English achievement in this field has on the whole exceeded that of most other countries in the last ten years, both in quantity and in quality. The pace was set after the War by the Churchill Gardens of A. J. Philip Powell (b. 1921) and his partner Hidalgo Moya in Pimlico, London, for which the Westminster Borough Council is the client. For over a decade the planning and building this vast urban project has gone forward towards completion with rising standards of design and finish. Perhaps the finest single block is De Quincey House, with its ingenious section of duplexes approached by access galleries. But the Architect's Department of the London County Council, under the successive leadership of Robert Matthew (b. 1906) and of Sir Leslie Martin (b. 1900), in the last seven years equalled and perhaps exceeded in quality, as many times over in quantity, the achievement of Powell & Moya. Whether on urban sites, such as that at Loughborough Road in South London (Plate 186B), or on more open sites, as at the Ackroydon estate in Putney or at Roehampton, by the combination of tall blocks, some square in plan, some slab-like, with ranges of lower blocks of maisonettes and terraces of houses the L.C.C. is providing – piecemeal at least – examples of mid-twentieth-century urbanism more impressive than anything the New Towns have yet to offer. A provincial English example of comparable excellence is the Tile Hill Estate outside Coventry by Arthur Ling, the Borough Architect.

The forty-eight slabs of the Cerro Piloto development of 1955 built by the Banco Obrero, the Venezuelan public housing corporation, and designed by Guido Bermudez (b. 1925), rising against the mountains outside Caracas more than rival in extent and in scale the English examples (Plate 187A). And in the Cerro Grande blocks of flats there of 1953–5 Bermudez rivalled the ingenuity of Powell & Moya and the L.C.C. in the use of duplexes. Interesting for the mixture of types – tall slabs, lower blocks of flats, and houses – is the Centro Urbano Presidente Juarez in Mexico City by Mario Pani (b. 1901); the handsome colours used here were chosen by the painter Carlos Mérida. But the most exemplary of the Latin American estates is Pedregulho outside Rio de Janeiro begun in 1948 by Affonso Eduardo Reidy (b. 1909). Here the tall serpentine block at the rear is entered at middle level from the hill slope, a scheme suggested by certain of Le Corbusier's projects of the thirties for North Africa, and various community buildings provide something of New Town character in the development, as does a range of low blocks with shops at their base in the Tile Hill Estate at Coventry. Most notable is

Reidy's school at Pedregulho with its murals of *azulejos* – glazed tiles – by Cándido Portinari and its characteristic repertory of the architectural forms of the Cariocan School. Of that Reidy, a member of the original group who designed and built the Ministry of Education, was as much one of the founders as Oscar Niemeyer.

In the mid twentieth century, however, it is England that leads in school design and construction even more definitely than in the design of tall housing blocks. In particular, the Hertfordshire County Architect's Office under C. H. Aslin (b. 1893) has developed a system of construction using a light-metal skeleton and prefabricated concrete slabs that is of very great technical interest. Not all the Hertfordshire schools are designed in the County Architect's Office, and some of the best are by private architects, such as the Architects' Co-partnership and James Cubitt & Partners (Plate 186A). The new architecture has been more widely and successfully used for schools than for most other types of buildings. Outside England those of Donald Barthelmé in Texas, such as his Elementary School at West Columbia of 1952, and by Ernest J. Kump (b. 1911) in California may be especially noted, although they represent no such concerted programme of design and construction as is spreading in England from Hertfordshire to other parts of the country. Outright 'traditional' schools are rare anywhere today.

In church architecture the situation has been rather different. Although Perret and Wright, Moser and Böhm, among the older generation of modern architects, all built notable churches, until Le Corbusier's Notre-Dame-du-Haut at Ronchamp the international leaders of the next generation were rarely called on to design them; and from Oud's church of the late twenties at Oud Mathenesse through Mies's Chapel of 1950 at the Illinois Institute of Technology it seemed that the extreme rationalism of these men made it difficult if not impossible for them to provide ecclesiastical edifices which differed in any expressive way from meeting-halls. Something was said earlier of the more emotional concrete-vaulted church architecture of Böhm and the line of related advance in the last two decades from the semi-traditional, somewhat Gothic or Baroque, effects of the twenties to work of completely original character. Niemeyer's São Francisco at Pampulha (Plate 189), completed in 1943, was one of the buildings that early established his reputation as one of the most imaginative architects of his generation anywhere in the world. Since then Latin American churches as different as Candela's Nuestra Señora de los Milagros in Mexico City and the unvaulted Beato Martín Porres at Cataño outside San Juan in Puerto Rico by Henry Klumb (b. 1905), a pupil of Wright, have illustrated a wider range of possibilities; while Juvenal Moya's Nuestra Señora de Fatimá and his chapel at the Ginnásio Moderno in Bogotá, the one of 1953–4,the other of 1954–5, follow – with considerable vulgarization – the more lyrical line of Niemeyer's São Francisco.

Less operatic, but doubtless better adapted to Protestant use, are the churches in the American Northwest by Belluschi, notably the First Presbyterian of 1951 at Cottage Grove in Oregon. Various Swiss churches, some Catholic but more of them Protestant, follow also in this line, to which such earlier-mentioned churches as Moser's Sankt Antonius in Basel of 1927 and the elder Saarinen's Christ Lutheran, Minneapolis, of 1948 belong (Plate 157B). The younger Saarinen's silo-like circular chapel of red brick

at the Massachusetts Institute of Technology of 1954–5, however, reverts to something much more emotional. There is great ingenuity in the handling of the lighting, which streams down from above over a screen by Harry Bertoia and also penetrates more subtly round the edges of the low-arched base through the water of a surrounding moat.

Johnson's synagogue in Port Chester, N.Y., of 1955–6, while severe in its general character, uses coloured glass in slots between the vertical slabs with which the visible steel frame is filled and also a curved awning-like ceiling of plaster to warm and enrich the basically Miesian paradigm. Accessories by the sculptor Ibrahim Lassaw also play an important part in the interior; while the oval domed entrance vestibule is an element of almost Baroque formal interest despite its ascetic simplicity of execution. Thus, two Miesian disciples offer in their ecclesiastical work correctives to the classroom-like coldness of his own chapel in Chicago.

Such large-scale constructions as factories and tall housing blocks, together with skyscrapers, represent the new architecture's preoccupation with building problems that the nineteenth century had already essayed, but of which the development was not carried to its logical extremes, either technically or architecturally, before the present period. Curiously enough, in the provision of new edifices to serve the needs of transportation, the nineteenth century in its middle decades was rather more successful in bringing the railway station to early maturity than the twentieth century has been with the airport. One of the largest and finest post-war buildings of Italy is the Rome railway station (Plate 183B), and it is evident that the active campaign of modernizing and rebuilding stations in Italy is beginning to be reflected in other countries. But airports have yet to find so satisfactory an expression, partly because the expansion of traffic everywhere makes them inadequate almost before they are completed. Too often the necessity for continual extension destroys such integrity of conception as the architects were able to give them in the first place. Some of the world's busiest, such as Idlewild near New York – now in process of piecemeal rebuilding – and Midway near Chicago, are near-shambles beside which century-old railway stations appear as masterpieces of up-to-date organization! Here, as in many other fields of contemporary building, there seem to be two main lines of approach, but not properly to be distinguished as 'rational' versus 'emotional', since both are almost entirely dependent on the structural solutions chosen. Of the first sort a relatively early example (which now carries only local traffic and has therefore not had to be expanded), the Santos Dumont Airport by the Roberto brothers begun in 1938 and largely completed after 1944 at the bay's edge in downtown Rio de Janeiro, remains one of the best; for it is compactly planned, clear and direct in design, and elegant in the choice of materials and the use of colour. The San Juan Airport completed in 1955 by Torro, Ferrer & Torregrossa [10] in Puerto Rico is larger and somewhat less refined in detail, but an excellent example of planning in terms of circulation. The vast London Airport by Gibberd is still incomplete.

Two other airports of much the same date, the very large one at St Louis by Minoru Yamasaki (b. 1912) and Joseph W. Leinweber, and the small one by Pani and his partner Enrique del Moral at Acapulco, use concrete shell vaults with notably

dramatic effect. It may well be that the 'classic' stage of airport design, reached in railway stations between 1845 and 1855, is only now beginning – and will be rather Baroque!

From the airport to the individual dwelling, from the newest sort of structure to what is presumably the oldest, represents a considerable jump. Yet it is at least debatable whether the best houses of the mid twentieth century, continuing a line of development that has earlier been traced forward from 1800 (see Chapter 15), are not more satisfactory solutions of the problems their designing and building poses, both practically and aesthetically, than are any of the airports so far erected. To a considerable extent they are as novel.[11] The dwelling may not, in the last thirty years, have developed primarily as a 'machine for living in', according to Le Corbusier's famous phrase, but it has certainly become more and more a 'box for housing machinery in'. As the relative proportion of the total cost spent for mechanical equipment has gone up, the shell has shrunk. As the shell has shrunk, planning has been increasingly simplified. Only rarely is the ultimate in unification of space reached, as in Mies's Farnsworth house or Philip Johnson's own house in New Canaan, Conn., where only the bathroom is enclosed and the other subdivisions of the interior are but ranges of cupboards not reaching to the ceiling. Equally rare is the exclusively glass walling of these two houses, clearly the extreme point of a *crescendo* that goes back at least to the window-walls of the third quarter of the nineteenth century. But if they represent the end point of several developments, from which there has since been a return even on the part of their own architects (Plate 190A), the extremes that they illustrate are in many respects those towards which houses in general still seem to be tending.

The house as a detached, individually-designed edifice is still for most people the ideal dwelling. But at no time since 1800 has such a dwelling been more of a luxury. Convenience and economy drive rich and poor alike towards more communal forms of habitation, whether they be the cabañas of the millionaires' motels at Palm Springs or the low-cost flats in suburban 'point-blocks'. In between these poles are all the varieties of terrace-housing, 'semi-detachery', and builders' standardized products, ranging from conservative parodies of the individually designed houses of a generation ago through various vulgarizations of more modern houses to the prefabricated package-dwelling which seems to be no nearer to receiving that general acceptance which would make it economical than it was a hundred years ago. Mass housing, no matter what form it takes, whether the forty-eight tall slabs of the Cerro Piloto or the forty-eight hundred, more or less, semi-detached two-storey dwellings of an English housing estate, belongs increasingly to the world of bureaucratized architecture. The house, on the other hand, conceived as an individualized entity, is almost as much a specialized and exceptional product today as the church; yet the changes first made in individual houses gradually affect the standards of all housing. Particularly in North and South America they still provide architectural opportunities of the greatest interest and variety. Latin American houses, for example, often retain the semi-oriental ideals of seclusion of the Iberian tradition; yet behind the walls surrounding their plots to cut out the world, they are often opener than houses in the United States, since a warm climate makes of the

patio or garden the principal living area. Niemeyer's own house of 1954 at Gávea outside Rio de Janeiro is almost as much a glass box as Mies's or Johnson's, although its glass walls are set under a slab whose outline is a continuous free curve. The house of Osvaldo Arthur Bratke (b. 1907) at 3008 Avenida Morumbí outside São Paulo is also closer in plan and conception to houses in the United States, protection of various sorts being provided by grilles and movable shutters (Plate 190B; Figure 56).

There is considerable variety in contemporary house-design in Latin America, ranging all the way from such Mexican houses as those of Francisco Artigas (b. 1916) or Sordo Madaleno that present a blank wall to the street and yet open up completely to a patio or a garden, to Niemeyer's open pavilion at Gávea. In North America there is perhaps even wider diversity. Despite the equalization of climate now readily pro-

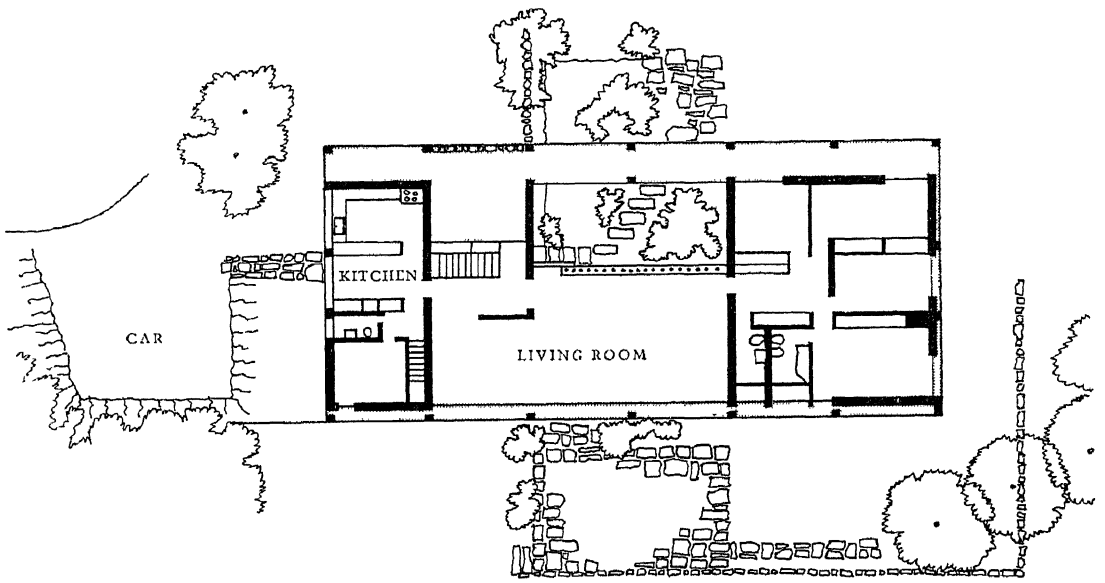


Figure 56. Osvaldo Arthur Bratke: São Paulo, Morumbí, Bratke house, 1953, plan

vided by heating and cooling facilities, there are greater differences between one region and another in the forces of nature that must be controlled or protected against, from the insects and hurricanes of Florida to the blizzards of Minnesota, than between the various countries of Latin America. Johnson's Davis house at Wayzata in Minnesota is enclosed, however, not because of the climate, but in order to provide hanging space for an art collection, while it opens within on to a patio that can be roofed in winter (Figure 57). Neither screening nor anchorage against high winds is conspicuous in the design of most of the Florida houses of Paul Rudolph (b. 1918). On the West Coast the aberrant casualness of the Bay Region manner of the thirties and forties has become increasingly disciplined. Wooden construction, pitched roofs, and a certain discursiveness of planning still contrast, however, with more rigidly Miesian design; yet the finest houses of Joseph Esherick in and around San Francisco or of John Yeon in Portland, Ore., to mention only two West Coast architects, have sometimes rivalled in distinction those of Johnson and Rudolph.

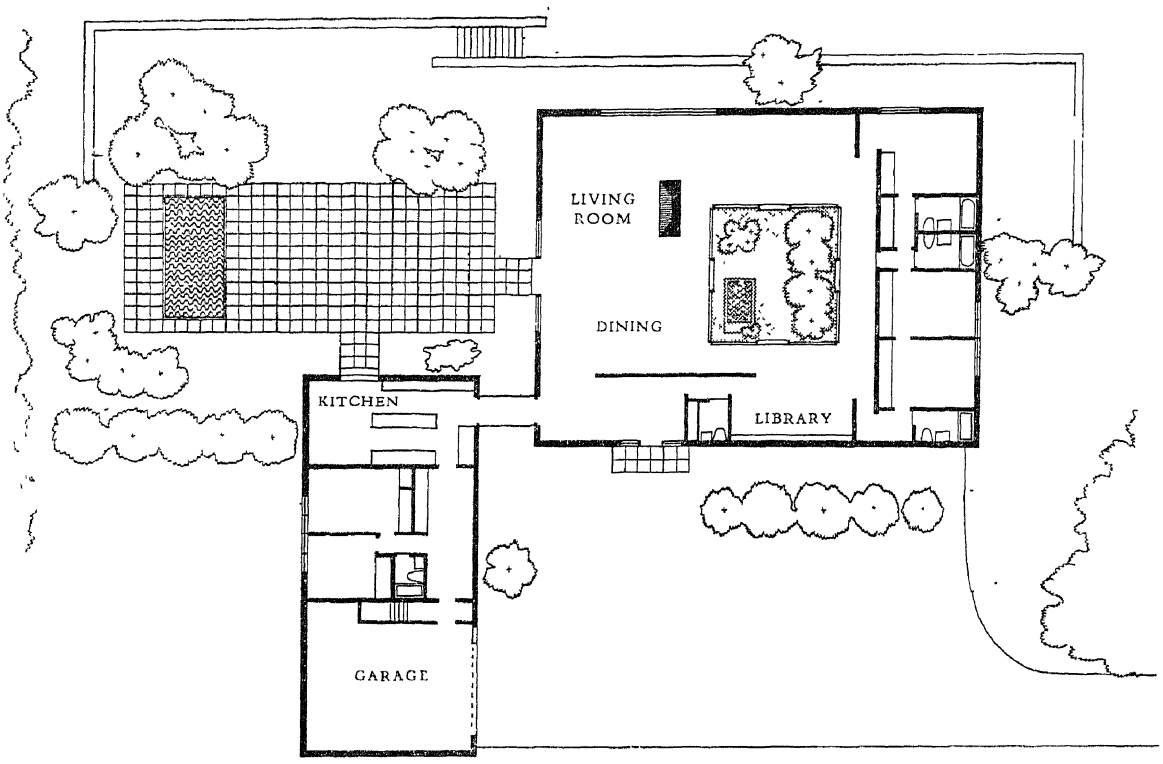


Figure 57. Philip Johnson: Wayzata, Minn., Richard S. Davis house, 1954

Whether the building of individual houses in other countries will ever again have the significance it still retains in the New World depends on many extra-architectural factors. The last thing a historian should pretend with regard to this or to any other aspect of the present is that he is capable of prophecy. The history of architecture in the second half of this century can only be written in the future. The glimpses – for they are no more than that – of post-war production given here represent a critic's and not an historian's selection, and a selection inevitably much influenced by what that critic knows best at first hand.

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Despite the obvious necessity of laying down in the Introduction some sort of eighteenth-century foundation, this book had a recognized historical turning-point for its beginning; it has no such point at which to end. From Wright at ninety to the men two generations younger than he mentioned in this chapter, the work of the architects of the western world shows no convincing evidence of a major and general turn, however surprising in the light of his work of the twenties Le Corbusier's church at Ronchamp may be. We stop of necessity quite arbitrarily in mid-stream and no peroration is appropriate. Fortunately the contemporary history of architecture is being recorded more promptly and completely than ever before in the professional press. It has not seemed necessary to footnote this chapter heavily with detailed references to

periodicals when every issue of the principal journals inevitably includes material illustrative of current production throughout the world. When one leaves the world of history for the world of 'current events', the time has come to turn from books to periodicals. In the Bibliography there are naturally few 'monographs' – i.e. books or summary articles – devoted to the men mentioned in this chapter, since many of them are still at the outset of their careers.[12]

From the tower of Fonthill Abbey to the slabs of the Cerro Piloto – dwellings both; from the Bank of England to the Edificio Polar, both housing business as it was never housed before the period with which this book deals; from Baltimore Cathedral to Notre-Dame-du-Haut, the range of notable achievement recorded in this book is not readily outranked in variety by any other hundred-and-fifty-year period in the history of the western world. As to the absolute quality of that achievement, as distinguished from what may be called the 'plot'-interest of various relatively coherent developments continuing over the last century and a half, it requires a very catholic taste indeed even to pretend to pronounce. The 'revivals' of the nineteenth century and the 'traditionalism' of the twentieth century accepted the dangerous challenge of meeting the earlier past on its own ground, and this in itself is enough to reduce the absolute value of most nineteenth- and twentieth-century production. Yet there were renaissances long before there were revivals; and at almost any given moment of the past most production has been the equivalent in stylistic retardation of the traditional architecture of the twentieth century. If one must have originality, these hundred and fifty years have not lacked it, from Ledoux and Soane to Gaudí and Wright. Of the hundreds of names mentioned in these twenty-five chapters there is perhaps none equal to Bramante or to Bernini, but how many were there in the preceding hundred and fifty years? while the variety of approach represented, from a Schinkel to a Le Corbusier, from a Butterfield to a Mies, is hardly to be equalled in any comparable period of history. Above all, this is the stage of architectural history that lies between the unhallowed present and the hallowed past, between the cultural certainties – if they were so certain – of the eighteenth century and the cultural anxieties of the present. What we are we can only hope to understand by exploring the immediate ancestry of our own present. Only revivalists could afford to denigrate and ignore all that lay between them and some 'golden age' they sought to emulate. The future must build upon the foundations – so very various, so often nearly contradictory – of the architecture of the last hundred and fifty years.

NOTES AND BIBLIOGRAPHY

NOTES

INTRODUCTION

p. xxi 1. Sigfried Giedion introduced this term in his *Spätbarocker und romantischer Klassizismus* in 1922 and provided an extended discussion of the concept. Fiske Kimball first used the term in English in his article 'Romantic Classicism in Architecture', *Gazette des Beaux-Arts*, XXV (1944), 95–112.

2. See Hautecœur, L., *Rome et la renaissance de l'antiquité à la fin du XVIII^e siècle*, Paris, 1912. However, the deeper background of theory was French, not Roman. Unhappily the brevity with which this whole matter must be treated here, where it is merely prefatory to an account of nineteenth- and twentieth-century architecture, makes it impossible to discuss such French theorists of the early eighteenth century as J.-F. Félibien (1656–1733), the Abbé de Cordemoy (1651–1722), and A.-F. Frézier (1682–1773); even Laugier appears somewhat out of context, since he was active not in Rome but in France. Hautecœur in *Histoire de l'architecture classique*, vols III and IV, and Kaufmann in *Architecture in the Age of Reason* – particularly in Chapter XI – elaborate this background of theory in France centring round the *Architecture française*, 3 vols, Paris, 1752–6, of J.-F. Blondel (1705–74).

p. xxii 3. Monographs on major architects will be found listed alphabetically by architect in the Bibliography and are not referenced from the text.

4. The changing attitudes towards the Greek Doric order provide a measure of the rise of Romantic Classicism. It is noteworthy that Soufflot was one of the first to make drawings of the very archaic Doric of Paestum, but it never occurred to him to emulate it in his own work. See Pevsner, N., and Lang, S., 'Apollo or Baboon', *Architectural Review*, CIV (1948), 271–9.

p. xxiii 5. Winckelmann's major work is the *Geschichte der Kunst des Altertums*, 2 vols, Dresden, 1764.

6. Interest in Egyptian forms can be traced all the way back through the Baroque period to the early Renaissance, but it undoubtedly increased after 1750. See Pevsner, N., and Lang, S., 'The Egyptian Revival', *Architectural Review*, CXIX (1956), 242–54.

7. Adam studied, with the assistance of the French *pensionnaire* C.-L. Clérisseau (1722–1820), the Late Roman ruins of Diocletian's Palace at Spalato in 1757, and began his brilliant career in London two years later with the Admiralty Screen in Whitehall. See Adam, R., *Ruins of the Palace of the Emperor Diocletian at Spalatro*, London, 1764.

8. The present dome is a relatively late emendation; the original crowning feature was much less severe. Soufflot sent a pupil named Roche to London to make measured drawings of St Paul's in 1776, the year before he prepared this design. In general, the Panthéon appears much more Romantic Classical today than what Soufflot actually built. The towers which once rose over the corners of the portico – in any case disapproved by Soufflot – were removed by Antoine Quatremère de Quincy (1755–1849) in 1791, and he also filled up the windows that originally cut into the plain wall surfaces. The murals are all of the nineteenth century.

9. Actually many of the spans are much too great to be covered by single stones and the entablatures are really flat arches. There is also considerable use of iron.

10. See Rosenau, H., 'George Dance the Younger', *Journal of the Royal Institute of British Architects*, LIV (1947), 502–7. p. xxiv

11. See Rosenau, H. (ed.), *Boullée's Treatise on Architecture*, London, 1953; and Boullée, E.-L., *Mémoire sur . . . la Bibliothèque du Roi . . .*, [Paris] 1785.

12. This more classical arrangement was first proposed in the 1760s by Pierre Patte (1723–1814), a theorist in the Blondel tradition, on the analogy of Palladio's theatre in Vicenza.

13. This is not true, however, of much of his executed work at Arc-Senans which has heavily plastic roofs of various shapes. p. xxv

14. So did Friedrich Gilly in Germany and – according to Kaufmann – Valadier in Italy. p. xxvi

CHAPTER I

1. See Steel, H. R., and Yerbury, F. R., *The Old Bank of England*, London, 1930, for photographic coverage of this monument of which the interiors p. 1

were largely destroyed in the 1920s, and even the exterior considerably – and unnecessarily – modified (see Chapter 24).

p. 2 2. See Britton, J., *Illustrations of Fonthill Abbey*, London, 1823; Rutter, J., *An Illustrated History and Description of Fonthill Abbey*, Shaftesbury, 1823; and Storer, J., *A Description of Fonthill Abbey, Wiltshire*, London, 1812. The most extensive modern account of the building of Fonthill Abbey is given by Brockman, H. A. N., *The Caliph of Fonthill*, London [1956].

p. 3 3. See Pevsner, N., 'The Genesis of the Picturesque', *Architectural Review*, XCVI (1944), 139–46, and Pevsner, N., 'Richard Payne Knight', *Art Bulletin*, XXXI (1949), 293–320.

p. 4 4. Hussey in *The Picturesque* lists many of these books and gives good examples of their illustrations.

5. First, that is, in this period. The columnar Monument in the City of London by Robert Hooke, commemorating the Great Fire, dates from the 1670s.

p. 5 6. See Telford, T., *An Account of the Improvements of the Port of London*, London, 1801.

7. See Kimball, F., *Thomas Jefferson and the First Monument of the Classic Revival in America*, Harrisburg, 1915.

p. 6 8. See Kimball, F., 'The Genesis of the White House', *Century Magazine*, February 1918.

9. See Brown, G., *History of the United States Capitol*, 2 vols, Washington, 1900–3.

10. See Kimball, F., 'Origin of the Plan of Washington, D.C.', *Architectural Review* (New York), VII (1918), 41–5; and Kite, E., *L'Enfant and Washington*, Baltimore, 1929.

p. 7 11. See Davison, C. V., 'Maximilien and Eliza Godefroy', 'Maximilien Godefroy', *Maryland Historical Magazine*, March, September 1934.

12. See Hislop, C., and Larrabee, H. A., 'Joseph-Jacques Ramée and the Building of North and South College', *Union College Alumni Monthly*, February 1938.

p. 10 13. The idea probably originated with Soufflot, who had earlier proposed a similar plan for the cathedral of Rennes.

p. 13 14. See Chierici, G., *La Reggia di Caserta*, Rome, 1937; and Mongiello, G., *La Reggia di Caserta*, Caserta, 1954.

p. 14 15. See Hautecœur, L., *L'Architecture classique à Saint Pétersbourg à la fin du XVIII^e siècle*, Paris, 1912.

16. See Thomon, T. de, *Recueil des principaux monuments construits à Saint Pétersbourg*, Petersburg, 1806; repeated in his *Traité de peinture*, Paris, 1809; and Loukomski, G., 'Thomas de Thomon', *Apollo*, XLII (1945), 297 ff.

17. See Lancere, N., 'Adrien Zakharov and the p. 15
Admiralty at Petersburg' (in Russian), *Starye Gody*, (1911), 3–64.

18. Kaufmann, who illustrates the Belanger project in *Architecture in the Age of Reason*, figure 169, dates it around 1808 on the ground that slaughterhouses first began to be built in Paris in that year. It is extremely unlikely, of course, that Hansen ever saw this project; but the similarity of his tower to Belanger's indicates how closely he was in tune with his French contemporaries. In any case similar towers are to be found in the projects published by Durand in his *Précis* of 1802–5, which Hansen must have known (see Chapter 2).

CHAPTER 2

1. Allais and others, *Projets d'architecture ... qui* p. 20
ont mérités les grands prix, Paris, 1806, and at different dates subsequently with varying authors and titles.

2. Durand was already well known as the compiler of the *Recueil et parallèle des édifices en tout genre, anciens et modernes*, Paris, 1800, a curious work in which the drawings of important buildings of all periods are freely modified to bring them into conformity with the author's modular theories of proportion. This is conventionally known as 'Le grand Durand'.

3. Rondelet, J. B., *Traité théorique et pratique de l'art de bâtir*, 4 vols, Paris, 1802–17. There were several later editions.

4. French designs of this period for houses were p. 22
provided in profusion in the publications of J. C. Krafft. See Krafft, J. C., and Ransonette, N., *Plans, coupes, élévations des plus belles maisons et des hôtels construits à Paris et dans les environs*, Paris [*c.* 1802]; reprint, Paris, 1909; and Krafft, J. C., *Recueil d'architecture civile*, Paris, 1812; later ed., 1829. Krafft, J. C., and Thiollet, F., *Choix des plus jolies maisons de Paris et de ses environs, édifices et monuments publics*, Paris, 1849, may also be mentioned here although very much later. It is significant of the international availability of the earliest work listed here that it was provided with texts in French, English, and German.

p. 24 5. Klenze, L. von, *Walhalla in artistischer und technischer Beziehung*, Munich, 1842.

p. 25 6. See Hitchcock, H.-R., *Early Museum Architecture*, Hartford, 1934.

7. Grandjean de Montigny, A.-H.-V., and Famin, A.-P.-Ste-M., *Architecture toscane*, Paris, 1815.

8. See Klenze, L. von, *Anweisung der Architektur des christlichen Kultus*, Munich, 1834.

p. 27 9. See Möllinger, K., *Elemente des Rundbogenstiles*, 2nd ed., Munich, 1848. It is convenient to retain the German term for this very Germanic round-arched style, even though it flourished in several countries besides Germany (see below in this chapter for Scandinavia, and Chapter 5 for America).

p. 28 10. See Hübsch, H., *Die altchristlichen Kirchen nach den Baudenkmalen und älteren Beschreibungen*, 2 vols, Karlsruhe, 1862–3.

p. 32 11. Durand, *Précis*, II, plate 13.

12. See Häberlin, C. L., *Sanssouci, Potsdam und Umgebung*, Berlin and Potsdam, 1855; Poensgen, G., *Die Bauten Friedrich Wilhelms IV in Potsdam*, Potsdam, 1930; Huth, H., *Der Park von Sanssouci*, Berlin, 1929; Kania, H., *Potsdamer Baukunst*, Berlin, 1926; *Potsdam. Staats- und Burgerbauten*, Berlin, 1939; and Hitchcock, H.-R., 'Romantic Architecture of Potsdam', *International Studio*, 99 (1931), 46–9.

p. 33 13. See Sievers, J., *Das Palais des Prinzen Karl von Preussen*, Berlin, 1928.

p. 34 14. Notably Séheult, F.-L., *Recueil d'architecture dessiné et mesuré en Italie ... dans 1791–93*, Paris, 1821.

p. 35 15. See Persius, L., *Architektonische Entwürfe für den Umbau vorhandener Gebäude*, Potsdam, 1849; and Fleetwood Hesketh, R. and P., 'Ludwig Persius of Potsdam', *Architects Journal*, LXVIII (1928), 77–87, 113–20.

p. 36 16. Ettlinger, L., 'A German Architect's Visit to England in 1826', *Architectural Review*, XCVII (1945), 131–4.

17. See Poensgen, G., *Schloss Babelsberg*, Berlin, 1929.

p. 37 18. See Semper, G., *Das Königliche Hoftheater zu Dresden*, Brunswick, 1849.

p. 38 19. Gärtner's design for the Palace owes a good deal to a project prepared by Klenze for a palace on the Kerameikos hill which was never begun. Fortunately Schinkel's more ambitious project for a palace on the Akropolis was also not carried out. The digging away of the ground, which originally sloped up to the Palace above the square, and the introduction in the 1930s of the present retaining wall with the Tomb of the Unknown Soldier have diminished somewhat the effectiveness of the front of the Palace.

20. See Amodeo, A., 'La Giovinezza di Pietro Nobile', 'La Maturità di Pietro Nobile', *L'Architettura*, I (1955), 49–52; 378–84. p. 39

21. See *Thorvaldsens Museum*, Copenhagen, 1953. p. 40

22. See Hekker, H. C., 'De Nederlandse Bouwkunst in het Begin van de Negentiende Eeuw', *Bulletin van de Kon. Ned. Oudh. Bond*, IV (1951), 1–28. p. 42

CHAPTER 3

1. The idea for the two-towered façade is probably derived from a project of 1801 by Lebas, but could also come from Gisors's Saint-Vincent in Mâcon of 1810. p. 45

2. Three pieces only of the enamelled lava decoration were put in place; owing to the ensuing outcry they were soon removed.

3. Hittorff and other architects of his generation such as Henri Labrouste and Duban, who supported his proposal to revive the external polychromy they had noted on the classical temples of Sicily, were closer in fact to Ingres than to Delacroix. Ingres backed Labrouste's controversial rendering of the Paestum temples in 1828 showing external colour. Duban, one of the first to introduce polychrome decoration – the plaques of enamelled lava used in the entrance courtyard of the École des Beaux-Arts are his – was a close friend and on occasion a collaborator of Ingres. Hittorff collected paintings by Ingres and assisted him with the architectural backgrounds of his pictures, though that in the 'Stratonice', which gives perhaps the best idea of the sort of polychromy intended by these architects, was supplied by Victor Baltard.

4. Actually the original paintwork on the beams and panels of the vestibules of the Gare du Nord is still there, but so dulled and begrimed that one hardly notices it.

5. As has been noted in Chapter 2, both de Chateauneuf and de Meuron studied with Leclerc.

6. The history of this project is very complicated. As might be surmised from its character, a design was at one point prepared by Gilbert, the principal Louis Philippe architect for this sort of work. The actual construction of the Hôtel Dieu by Diet p. 49

followed only after a decade of changes of plan, yet the executed work probably incorporates something of Gilbert's design; in any case, what was built is still wholly in the spirit of Gilbert's Louis Philippe work and not at all in that of the Second Empire (see Chapter 8).

p. 50 7. Begun by John Harvey, continued by Thomas Hardwick, and completed by Sir Robert Smirke.

p. 55 8. See Missirini, M., *Del Tempio eretto in Possagno da Antonio Canova*, Venice, 1833.

p. 56 9. See Falconetti, A., *Il Caffè Pedrocchi, dagherrotipo artistico descrittivo*, Padua, 1847; and Cimegotto, C., and others, [Centenary volume on the Caffè Pedrocchi], Padua, 1931.

p. 58 10. See Montferrand, A.-R. de, *L'Église cathédrale de Saint-Isaac, description architecturale, pittoresque, et historique*, Saint-Pétersbourg, 1845.

CHAPTER 4

p. 60 1. See Soane, J., *Description of the House and Museum on the North Side of Lincoln's Inn Fields*, London, 1832; enl. ed., 1835–6.

2. See Note 1, Chapter 1.

p. 61 3. St Pancras is really based on Gibbs's St Martin's-in-the-Fields as regards the exterior; but all the features have, so to say, been translated into the Greek of the Erechtheum. See Inwood, W. and H. W., *St Pancras New Church. Specifications ...*, London, 1819; and Inwood, H. W., *The Erechtheion at Athens*, London, 1827.

p. 66 4. See Smith, H. C., *Buckingham Palace*, London, 1931.

The palatial character of Cumberland Terrace is due to the fact that it faced the site of an intended summer palace in the Park planned for George IV but never even begun.

p. 67 5. See Pevsner, N., 'British Museum 1753–1953', *Architectural Review*, CXIII (1953), 179–82.

p. 69 6. See Whiffen, M., *The Architecture of Sir Charles Barry in Manchester and Neighbourhood*, Manchester, 1950.

p. 70 7. In one sense the Baths of Caracalla provided Elmes's model, since the size of the great interior there was intentionally exceeded here; in another sense, this was a grandiose development of Wren's relatively modest interior of St James's, Piccadilly. Just as Gibbs was translated into Greek by the Inwoods at St Pancras', Wren was translated into Latin here, but with less precision of vocabulary.

8. See Parker, C., *Villa Rustica*, 3 vols, London, 1832, 1833, 1841; 2nd ed., London, 1848. p. 76

CHAPTER 5

1. When railway stations were needed in Brazil after the mid century they were actually imported, in prefabricated iron, from England. p. 77

2. See [Haviland, J.], *A Description of Haviland's Design for the New Penitentiary ...*, Philadelphia, 1824; Anon., *A Description of the Eastern Penitentiary ...*, Philadelphia, 1830; Crawford, W., *Report on the Penitentiaries of the United States*, London, 1834; Demetz, F.-A., and Blouet, A.-G., *Rapport sur les penitenciers des États Unis*, Paris, 1837; and Markus, T. A., 'Pattern of the Law; Baltham's Panopticon Scheme', *Architectural Review*, CXVI (1954), 251–6.

3. See Haviland, J., *The Builder's Assistant*, 3 vols, Philadelphia, 1818–21 – the first to include plates of the Greek orders; 2nd ed., Philadelphia, 1830; Benjamin, A., *The American Builder's Companion*, Boston, 1827 (the first edition is of 1806, but Greek orders were not included until this latest edition); *The Practical House Carpenter*, Boston, 1830, with later editions to 1857; *Practice of Architecture*, New York, 1833, with later editions to 1851; *Elements of Architecture*, Boston, 1843, 2nd ed., 1849; *The Builder's Guide*, Boston, 1839, with later editions to the Civil War; Lafever, M., *The Young Builder's General Instructor*, Newark, 1829; *The Modern Builder's Guide*, New York, 1833, with later editions to 1855; *The Beauties of Modern Architecture*, New York, 1835, with later editions to 1855; *The Architectural Instructor*, New York, 1856; Shaw, E., *Civil Architecture*, Boston, 1830, with later editions to 1855; and Hills, C., *The Builder's Guide*, Hartford, 1834, with later editions to 1847. p. 78

4. See Willard, S., *Plans and Sections of the Obelisk on Bunker's Hill*, Boston, 1843. p. 80

5. See Mills, R., *The American Pharos; or, Lighthouse Guide*, Washington, 1832; and *Waterworks for the Metropolitan City of Washington*, Washington, 1853.

6. See Thayer, R., *History, Organization and Functions of the Office of the Supervising Architect of the Treasury Department*, Washington, 1886. p. 81

7. Like the hill-top siting of Monticello, Jefferson's own nearby house – begun before the American Revolution and finally completed only in 1808 – this provision of an open end towards the view

illustrates his active response to the ideals of the Picturesque. For Monticello, moreover, drawings of Gothick garden fabricks exist. The fact that McKim, Mead & White blocked the view at the bottom of Jefferson's layout with a new building in the twentieth century is curious evidence of the lack of understanding of the essential qualities of the architecture and planning of this period on the part of even the most sophisticated 'traditional' architects – men who professed the greatest admiration for the work of such predecessors as Jefferson and yet proceeded to destroy its essence whenever the opportunity arose!

p. 83 8. From the time of Latrobe's Bank of 1798 the Greek temple paradigm for public buildings characteristically and quite inconsistently included vaulted interiors for protection against fire. Beginning with Mills's Patent Office, designed in 1839, metal internal construction was increasingly used to the same end of increasing fire-resistance. Both usages illustrate the technical-mindedness of this generation of architects in America.

9. In Nicholson, Peter, *The Carpenter's Guide*, London, 1849. See also Walter, T. U., *Report[s] of the Architect of the Girard College* ... [Philadelphia, 1834–50].

10. Once more, as with Latrobe and Mills, the importance of Strickland's work as an engineer should at least be noted. The principal publications of the period in this domain are his *Reports on the Canals, Railways, Roads and other Subjects*, Philadelphia, 1826, and his *Reports, Specifications and Estimates of Public Works in the United States*, London, 1841.

p. 84 11. The history of the building is so complex that it is difficult to know to whom the credit should be assigned for its distinguished design. The competition held in 1838 was won by Walter, who actually laid the foundations in 1839–40; but the executed design certainly owes more to the competition project of the painter Thomas Cole (1801–48). See Cummings, A. L., 'The Ohio State Capitol Competition', *Journal of the Society of Architectural Historians*, XII (1953), 15–18. Modifications of the scheme initiated in 1839–40 were made with Walter's assistance in 1844, and building was resumed in 1848 under the direction of William Russell West of Cincinnati. On his resignation in 1854 Nathan B. Kelly (1808–71) of Columbus succeeded, and the work was finally brought to a finish by Isaiah Rogers in 1858–61.

12. See Wheildon, W W., *Memoir of Solomon Willard*, Boston, 1865. p. 85

13. Greenough is better known today as the 'herald of functionalism' than as a sculptor. See Wynne, N., and Newhall B., 'Horatio Greenough: Herald of Functionalism', *Magazine of Art*, XXII (1939), 12–15. For his theories, see Greenough, H., *Aesthetics at Washington*, Washington, 1851; *Travels, Observations, and Experience of a Yankee Stone-cutter*, New York, 1852; and *Form and Function: Remarks on Art* (H. A. Small, ed.), Berkeley and Los Angeles, 1947.

14. There are measured drawings of these commercial buildings in Hitchcock, H.-R., *Guide to Boston Architecture*, New York, 1954. p. 86

15. The most thorough study of American industrial building of this period, including the housing of operatives, is Coolidge, J. P., *Mill and Mansion*, New York, 1942, which deals with Lowell, Mass. Considerable Rhode Island work is illustrated in Hitchcock, H.-R., *Rhode Island Architecture*, Providence, R.I., 1939.

16. See Eliot, W. H., *A Description of the Tremont House*, Boston, 1830. p. 88

17. Davis intended to include a central domed space on the model of Latrobe's Bank of 1798. This was omitted when the design of the interior was revised in execution by William Ross in collaboration with a visiting English architect, John Frazee.

18. See Schuyler, M., 'A Great American Architect; Leopold Eidlitz', *Architectural Record*, XXIV, 163–79, 277–92, 364–78, and, for a more general treatment, Meeks, C. L. V., 'Romanesque before Richardson in the United States', *Art Bulletin*, XXXV (1953), 17–33. p. 89

19. See Stone, E. M., *The Architect and Monetarian: a Brief Memoir of Thomas Alexander Tefft*, Providence, R.I., 1869, and Wriston, B., 'Architecture of Thomas Tefft', *Rhode Island School of Design Bulletin*, XVIII (1940), 37–45.

20. See Meeks, C. L. V., 'Henry Austin and the Italian Villa', *Art Bulletin*, XXX (1948), 145 ff.

21. See Smith, R. C., *John Notman and the Atheneum Building*, Philadelphia, 1951.

22. See Young, A. B., *New Custom House, Boston*, Boston, 1840. The tower that now replaces the dome was built by Peabody & Stearns in 1913–15; it was the first real skyscraper in Boston.

p. 89 23. See Young, A. B., *Plans of Public Buildings in Course of Construction under the Direction of the Secretary of the Treasury*, [Washington] 1855–6.

CHAPTER 6

p. 93 1. Hussey devotes only a portion of his book to the Picturesque in architecture. See also Pevsner, N., 'The Picturesque in Architecture', *Journal of the Royal Institute of British Architects*, LV (1947), 55–61. C. L. V. Meeks in 'Picturesque Eclecticism', *Art Bulletin*, XXXII (1950), 226–35, extends the range of the Picturesque to include considerably more of nineteenth-century architecture than is usual. As with 'Romantic' or 'Classical', it makes a difference whether or not one uses a capital; with a capital it seems best to restrict the term Picturesque to the late eighteenth and early nineteenth centuries, although the point of view lasted down into the fifties and it is also possible to recognize a sort of 'Neo-Picturesque' in the seventies and eighties (see Chapters 12 and 13 particularly).

2. See Note 3, Chapter 1.

3. Thomas Hopper was even more addicted to the 'Neo-Norman', as Gosford Castle in Ireland, begun in 1819, and the rather late Penrhyn Castle of 1827–37 near Bangor in Wales, all built of Mona marble and with a keep copied from that of twelfth-century Hedingham Castle in Essex, splendidly illustrate. See Fedden, R. R., 'Thomas Hopper and the Norman Revival', in Singleton, W. A. (ed.), *Studies in Architectural History*, II, London and York [1956].

4. See Musgrave, C., *Royal Pavilion; a Study in the Romantic*, Brighton, 1951; and Roberts, H. D., *A History of the Royal Pavilion, Brighton*, London, 1939.

p. 94 5. See Stroud, D., *Henry Holland*, London, 1950.

6. Repton's scheme was much less eclectic than Nash's, being entirely based, like Sezincote, on the Daniells' book on India (see Chapter 1).

7. See Dale, A., *Fashionable Brighton, 1820–1860*, London, 1947; and *History and Architecture of Brighton*, Brighton, 1950.

8. The work was begun in 1818 and continued down into the thirties. See Thompson, Francis, *A History of Chatsworth*, London, 1949.

p. 95 9. See Clark, E., *The Britannia and Conway Tubular Bridges*, 2 vols and album, London, 1850.

10. This was begun only in 1837 and completed, without the elaborate Egyptian decoration that Brunel originally intended, by W. H. Barlow (1812–1902) in 1864.

11. See Donner, P., 'Edensor, or Brown come True', *Architectural Review*, XCV (1944), 39–43.

12. See Loudon, J. C., *Encyclopaedia of Cottage, Farm and Villa Architecture and Furniture*, London, 1833; 2nd ed. with Supplement, 1842. This is the culminating anthology of the Picturesque, summarizing and all but concluding some forty years of Cottage and Villa Book production in England.

13. In addition to the treatises of C. L. Eastlake, Sir Kenneth Clark, Basil F. L. Clarke, and Marcus Whiffen listed in the Bibliography, see Kamphausen, A., *Gotik ohne Gott: ein Beitrag zur Deutung der Neugotik und des 19. Jahrhunderts*, Tübingen, 1952.

14. See Britton, J., *The Architectural Antiquities of Great Britain*, 5 vols, London, 1804–14; *Cathedral Antiquities of Great Britain*, 14 parts, 1814–35; etc.

15. See Pugin, A. C., and Willson, E. J., *Specimens of Gothic Architecture*, 2 vols, London [1821]; *Examples of Gothic Architecture*, London, 1831. Two more volumes of the *Examples* were published by A. W. N. Pugin after his father's death.

16. See Rickman, T., *An Attempt to Discriminate the Styles of English Architecture*, London [1817]; many later editions. The terms Rickman introduced here – Early English, Decorated, and Perpendicular – for the successive phases of the English Gothic are still in general use. For Rickman's use of iron in his early churches in Liverpool, see Chapter 7.

17. See Whiffen, M., 'Rickman and Cam- p. 9
bridge', *Architectural Review*, XCVIII (1945), 160–3.

18. Pugin's really important books concerning p. 9
architecture were three: *Contrasts, or a Parallel between the Architecture of the 15th and 19th Centuries*, London, 1836; *The True Principles of Pointed or Christian Architecture*, London, 1841; and *An Apology for the Revival of Christian Architecture in England*, London, 1843. All of these have later editions which sometimes show significant omissions and additions.

19. Founded at Cambridge University in 1839 and later known as the Ecclesiological Society. The Society's periodical, *The Ecclesiologist*, which began to appear in 1841, together with their other publications had a notable influence on architectural development in England and English-speaking countries in the forties and even later.

p. 98 20. See Bonnar, T., *Biographical Sketch of G. Meikle Kemp*, Edinburgh and London, 1892.

21. The palace-planning of one Durand pupil, Klenze, behind the regular façade of his Königsbau in Munich is actually very unsymmetrical and episodic, as Giedion points out in his *Spätbarocker und romantischer Klassizismus*.

p. 99 22. See Summerson, J., 'Pugin at Ramsgate', *Architectural Review*, CIII (1948), 163–6.

p. 103 23. An influential publication of this period was Hopkins, J., *Essay on Gothic Architecture*, Burlington, 1836. Bishop Hopkins himself designed and built several churches of the rather feeble Gothick order of the plates in this book.

24. See Upjohn, R., *Upjohn's Rural Architecture*, New York, 1852.

p. 104 25. See Wills, F., *Ancient English Ecclesiastical Architecture* ..., New York, 1850, which includes designs for new churches. Similar is Hart, J., *Designs for Parish Churches in the Three Styles of English Church Architecture*, New York, 1857.

26. Downing's major work, *A Treatise on the Theory and Practice of Landscape Gardening adapted to North America*, New York and London, 1841, with later editions to 1879 (and twentieth-century reprints), devotes only a chapter to house design. His really influential architectural books were *Cottage Residences*, New York, 1842, with later editions to 1887, and *The Architecture of Country Houses*, New York, 1850, with later editions to 1866.

27. See Scully, V. J., 'Romantic Rationalism and the Expression of Structure in Wood: Downing, Wheeler, Gardner and the "Stick Style", 1840–1876', *Art Bulletin*, XXXV (1953), 121–42.

28. See Robinson, P. F., *Rural Architecture*, London, 1822, with later editions to 1836, and also his *Designs for Ornamental Villas*, London, 1827, again with later editions to 1836.

29. The handsomest and one of the most authoritative mid-century books on chalets was by Graffenried and Sturler, *Architecture suisse*, Berne, 1844.

p. 105 30. See Vaux, C., *Villas and Cottages*, New York, 1857, with later editions to 1874.

31. See Lancaster, C., 'Oriental Forms in American Architecture', *Art Bulletin*, XXIX (1947), 183–93.

32. See Owen, R. D., *Hints on Public Architecture*, New York, 1849.

33. Of the *Seven Lamps*, of the first volume of the p. 107
Stones of Venice, and of the *Lectures on Architecture and Painting*, American editions appeared respectively in 1849, 1851, and 1854, the same years as the original London editions, and were succeeded by new issues and new editions at a pace far exceeding that maintained by the original publishers in England. In part this may merely mean that the American editions, all pirated, were smaller; but it is certainly evidence of an avid and extensive body of American readers from the mid century down to 1900.

34. See Chenesseau, G., *Sainte-Croix d'Orléans; histoire d'une cathédrale gothique réedifiée par les Bourbons, 1599–1829*, 3 vols, Paris, 1921.

The design of 1707 was by Robert de Cotte, J.-H. Mansart's principal lieutenant. The work was carried on more actively by A.-J. Gabriel under Louis XV. With the Restoration in 1816 Louis XVIII took up the completion of the project – which Napoleon had actually ordered before Waterloo – as part of the general preoccupation of the Restoration with a strengthening of the Church, and Charles X opened the finished church in 1829. Thus the renewal of activity here in the second decade of the nineteenth century precedes the other Neo-Gothic work described below by some twenty years. But credit – or discredit – for its Rococo-Gothic character belongs to the eighteenth not to the nineteenth century.

35. See Rotrou, E. de, *Dreux, ses antiquités, Chapelle St Louis*, Dreux, 1864.

36. The aesthetic climate of the period is presented in several books: Rosenthal, L., *L'Art et les artistes romantiques*, Paris, 1928; Robiquet, J., *L'Art et le goût sous la Restauration*, Paris, 1928; Schommer, P., *L'Art décoratif au temps du Romantisme*, Paris, 1928. These were published in advance of the 'Centenaire du Romantisme' in 1930.

37. See Thiénon, C., *Voyage pittoresque dans le* p. 109
Bocage de la Vendée, ou vues de Clisson et ses environs, Paris, 1817.

38. In 1836 Viollet-le-Duc wrote to his father that every greengrocer had a small Italian Villa with a tower, but this is patently a rhetorical exaggeration.

39. See Kaufmann, E., *Three Revolutionary Archi-* p. 110
tects, Boullée, Ledoux and Lequeu, Philadelphia, 1952.

40. See Heideloff, K., *Nürnberg's Baudenkmale der* p. 112
Vorzeit, Nuremberg, 1839; and *Die Kunst des Mittelalters in Schwaben*, Stuttgart, 1855. His *Orna-*

ments of the Middle Ages (to give it its English title), which began to appear in Nuremberg in 1838, had several editions with French and English text.

p. 113 41. This is least true in France, where the Neo-Catholic intellectuals were Gothic enthusiasts and succeeded in imposing Gothic on the architects, few of whom ever took to it with whole-hearted enthusiasm. Even Viollet-le-Duc, after the forties, was confusedly eclectic in most of his newly designed buildings as distinguished from his 'restorations' and his completions of unfinished medieval monuments (see Chapter 11).

CHAPTER 7

p. 115 1. See Sheppard, R., *Cast Iron in Building*, London, 1945, and Gloag, J. and Bridgwater, D., *A History of Cast Iron in Building*, London, 1948. These accounts require considerable revision in the light of later research by T. C. Bannister and by A. W. Skempton.

2. Problems of fire-resistance were already under discussion in England in the forties. The London Fire Department even refused to enter burning buildings with internal skeletons of iron because of the danger of their collapse; while the effectiveness of fireproofing iron columns with masonry sheathing was already being tested in 1846. I owe this information, as well as that on many other significant points in this chapter, to Turpin C. Bannister. He has most kindly brought up to date in correspondence the story that he tells so fully in 'The First Iron-Framed Buildings', *Architectural Review*, CVII (1950), 231–46, relaying in particular important discoveries by A. W. Skempton.

p. 116 3. See Giedion, S., *Bauen in Frankreich: Eisen, Eisenbeton*, Leipzig, 1928, an account which its own author and others have considerably emended since.

4. This was replaced a quarter of a century later when a new stair-hall was built by Percier & Fontaine.

p. 117 5. This correction of earlier lists of priority derives from as yet unpublished research by A. W. Skempton. In 1803–4 came two more iron-framed mills, the North Mill at Belper and one at Leeds.

6. See Fairbairn, W., *On the Application of Cast and Wrought Iron to Building Purposes*, London, 1854.

7. See Buckler, J. and J. C., *Views of Eaton Hall*, London, 1826.

p. 118 8. See Mock, E., *The Architecture of Bridges*, New York, 1949; Whitney, C., *Bridges; a Study in their Art, Science and Evolution*, New York, 1929; De Maré, E., *The Bridges of Britain*, London, 1954; Andrews, C., 'Early Iron Bridges of the British Isles', *Architectural Review*, LXXX (1936), 63–8; and *idem*, 'Early Victorian Bridges in Suspension in the British Isles', *Architectural Review*, LXXX (1936), 109–12.

9. In addition to Telford's own superbly illustrated autobiography and Gibb's life, see Sutherland, R. J. M., 'Telford', *Architectural Review*, CXIV (1953), 389–94.

10. The American James Finley built an iron-chain suspension bridge as early as 1801 and patented the system in 1808 after he had built several more. See Pope, T., *Treatise on Bridge Architecture*, New York, 1811, which was probably known to Telford.

11. These early French bridges – and several important early English ones too – are illustrated in later editions of Rondelet's *Traité* (see Note 3, Chapter 2), and in Bruyère, L., *Études relatives à l'art des constructions*, Paris, 1823. Delon's name is also given as Dilon and Dillon. p. 119

12. See Séguin, M., *Des ponts en fil de fer*, Paris, 1824.

13. See Ellet, C., *The Wheeling Bridge* [Philadelphia, 1852]. For this bridge Roebling provided the cables but not the design.

14. See Conant, W., *The Brooklyn Bridge*, New York [1883].

15. Hautecœur lists nearly forty built before 1848 in Paris alone. p. 120

16. Thiollet, F., *Serrurerie de fonte et de fer récemment executés*, Paris, 1832, illustrates several examples.

17. See Pevsner, N., 'Early Iron: Curvilinear Hothouses', *Architectural Review*, CVI (1949), 188–9.

18. See Meeks, C. L. V., 'The Life of a Form: A History of the Train Shed', *Architectural Review*, CX (1951), 163–74, and his book *The Railroad Station*, New Haven, 1956. p. 121

19. See Clark, E., *The Britannia and Conway Tubular Bridges*, 2 vols and atlas, London, 1850. p. 123

20. See Hitchcock, H.-R., 'The Coal Exchange', *Architectural Review*, CI (1947), 185–7.

21. See Bannister, T. C., 'The Genealogy of the Dome of the United States Capitol', *Journal of the Society of Architectural Historians*, VII (1948), 1–16.

p. 124 22. Bogardus's priority in this matter is by no means absolute. Certainly earlier in America was the Miners' Bank, built by Haviland in Pottsville, Penna., in 1829–30; but here cast iron was used only to provide a decorative sheathing of the brick walls in the absence of available stone. Also earlier was a steam flour-mill three storeys high prefabricated by Sir William Fairbairn in London in 1839 and sent to Turkey, where it was erected in Istanbul in 1840. This was more like Bogardus's building, and he had probably actually seen it when it was exhibited in London in Fairbairn's shops at Millwall before being disassembled and shipped away. Daniel D. Badger (1806–?) also claimed priority because of the many one-storey shops he had built of iron, one of which was just across Center Street in New York from Bogardus's factory. But Bogardus deserved the publicity he received at home and abroad; undoubtedly it was his activity which really started the general vogue of cast-iron fronts in the United States. See Bogardus, J., *Cast Iron Buildings: their Construction and Advantages*, New York, 1856 (written for Bogardus by a friendly 'ghost', John W. Thomson), and Bannister, T. C., 'Bogardus Revisited, Part One: The Iron Fronts', *Journal of the Society of Architectural Historians*, XV (1956), 12–22.

23. See Sturges, W. K., 'Cast Iron in New York', *Architectural Review*, CXIV (1953), 233–8.

24. See Hitchcock, H.-R., 'Early Cast Iron Façades', *Architectural Review*, CIX (1951), 113–16.

25. See Hitchcock, H.-R., *The Crystal Palace ...*, 2nd ed., Northampton, Mass., 1952.

p. 126 26. See Carstensen, G., *The New York Crystal Palace*, New York, 1854.

p. 128 27. The date of this is often given as 1855, when Labrouste took charge of the work at the Bibliothèque Nationale, and the original project for it may well be more nearly contemporaneous with the Reading Room of the British Museum.

28. Six pavilions were built first and four more before 1870; the remaining two were not erected until the 1930s. See Baltard, V., and Callet, F., *Monographie des Halles centrales de Paris construites sous le régne de Napoléon III*, Paris, 1865.

29. Technically the architect of Saint-Eugène in Paris was L.-A. Lusson, and in his monograph on the church, *Plans, coupes, elevations, et details de l'église ... de Saint Eugène*, Paris, 1855, he does not even mention Boileau's name. However, the credit – or, to many contemporaries, the discredit – for the character of the cast-iron Gothic interior of the Paris church has always been given to Boileau.

CHAPTER 8

p. 132 1. A notably extreme early example is Visconti's Fontaine Molière of 1841–4 in the Rue de Richelieu in Paris.

2. Here Visconti's taste also proves to have been premonitory. His project of 1833 for a library already had a bulbous roof over the central pavilion; while that of 1849 for the Bibliothèque Nationale in the Rue de Richelieu had bold engaged orders on the central pavilion and a tall straight-sided mansard as well.

p. 133 3. See Hitchcock, H.-R., 'Second Empire "avant la lettre" ', *Gazette des Beaux Arts*, XIII (1953), 115–30. The existence of French analogues in the forties was insufficiently stressed there, however.

4. See Kramer, E. W., 'Detlef Lienau, an Architect of the Brown Decades', *Journal of the Society of Architectural Historians*, XIV (1955), 18–25. Lienau was born in Schleswig-Holstein, then Danish, but received his early education in Germany.

5. See Aulanier, C., *Le Nouveau Louvre de Napoleon III*, Paris [1953], and Hautecoeur, L., *Histoire du Louvre*, Paris [n.d.].

p. 135 6. See Pinkney, D. H., *Napoleon III and the Rebuilding of Paris*, Princeton, N.J., 1958. Work began on the extension of the Rue de Rivoli in 1851; but it was only in 1853 that the Emperor found in G.-E. Haussmann (1809–91), whom he made Prefect of the Seine and later a baron, an adequate collaborator and executant for his tremendous urbanistic programme.

7. A tour which can be taken vicariously is provided in a splendid set of lithographs of the period, *Paris dans sa splendeur*; from this Plates 19 and 55B are taken.

p. 136 8. The degree of control exercised by public authority over the façades varied. For the extension of the Rue de Rivoli, continuation of Percier & Fontaine's original design was required; and for the Place de l'Étoile and the Place de l'Opéra comprehensive designs established in advance were enforced (see below). Elsewhere only the height of

the cornice line and the silhouette of the mansard were ordinarily standardized by regulation.

p. 136 9. Built in 1855 as the Hôtel des Chemins de Fer, but now the Hôtel du Louvre, and the work of Hittorff, Rohault de Fleury, Armand, and Pellechet. Hittorff and Rohault were also collaborating on the houses surrounding the Place de l'Étoile at this time. T. L. Donaldson, reporting on the new hotel at the Royal Institute of British Architects on 22 June 1855, remarked: 'The roof plays an important part in the design ... much of the majesty of French buildings is derived from these lofty roofs.' Donaldson supervised the erection of the Hope house, and had thus played a personal part in the introduction of the French mansard into England six years earlier.

p. 137 10. It is curious that there should be uncertainty about the authorship of a complex so central to the building activity of its era. The Grand Hotel which occupies the corner of the Boulevard des Italiens to the left of the Opéra was by the team responsible for the Hôtel des Chemins de Fer at the other end of the avenue (see Note 9). Pinkney in *Napoleon III and the Rebuilding of Paris*, the latest to discuss the subject, gives credit for all the façades around the Place de l'Opéra to Rohault; Hautecoeur assigns the rounded pavilions opposite the front of the Opéra to Blondel and mentions no other architect. Whoever was responsible, Garnier felt they were much too tall and confining for his Opéra.

11. See Garnier, J.-L.-C., *Le nouvel Opéra de Paris*, 2 vols text and 6 vols plates, Paris, 1875–81.

p. 138 12. By this time Viollet-le-Duc was far more 'Victorian' than Garnier, yet his secular work had become so eclectic and even original in detail as hardly any longer to be Neo-Gothic at all (see Chapter 11).

13. See Daly, C., and Davioud, G.-J.-A., *Les théâtres de la Place du Châtelet*, Paris [n.d.]

14. See *Notice du Palais de Longchamps à Marseille*, Marseilles, 1872.

p. 140 15. See Daly, C., *L'Architecture privée au XIX^e^ siècle ... sous Napoléon III; nouvelles maisons de Paris et des environs*, 3 vols, Paris, 1864; and Calliat, V., *Parallèle des nouvelles maisons de Paris*, vol. II, Paris, 1864. César Daly, as editor of the *Revue de l'architecture*, also determined the character of the material that periodical offered in this period.

p. 141 16. It is awkward that the long career of Viollet-le-Duc, like that of Semper, does not fall largely within any single chapter of this book. Active from the forties until the seventies, leading restorer of medieval monuments of his age in France, leading medieval archaeologist of Europe, controversial reformer of French architectural education (at least *in posse*), author of influential critical books, he was the inspirer – by his writings rather than his executed work – of a later generation of architectural innovators abroad perhaps even more notably than at home. His failure to conform to the normal pattern of architectural life that usually confines a particular man's significant activity within some one phase of architectural development – such as, on the whole, each chapter of this book deals with – makes it necessary to present his career in piecemeal fashion. It is partly covered in Chapter 6, with a few further mentions in this chapter, and – more significantly – in Chapter 11 in this Part and Chapter 16 at the beginning of Part Three. It is worth noting that Viollet-le-Duc is the only architect who enters this book in each of its three parts, even though it is only as an influence, not an executant, that he comes into the last part.

17. And some contemporaries were ready to say Sicilian! It was started – or at least commissioned – three years before the first volume of the great treatise on Syrian architecture appeared: Vogüé, C.-J.-M. de, *Syrie Centrale*, 2 vols, Paris, 1865–77. But Vaudremer may well have seen Vogüé's drawings before his book was published. p. 142

18. See Daumet, H., *Notice sur M. Abadie*, Paris, 1886. It is relevant that Abadie became Diocesan Architect of Périgueux in 1874, the same year he began the Sacré-Cœur, the competition for which he had won two years earlier. p. 143

19. For the Massachusetts institution, see Ware, W. R., *An Outline of a Course of Architectural Instruction*, Boston, 1866; for Columbia, see *idem*, 'The Instruction in Architecture at the School of Mines', *School of Mines Quarterly*, X (1888), 28–43. p. 144

20. Yet one of the boldest modern architects of Latin America, Carlos Raúl Villanueva (b. 1900) in Venezuela, was educated at the École des Beaux-Arts itself; and most of the other modern architects in these countries – those over forty at least – were trained in the local Escuelas de Bellas Artes based on the Paris original.

21. The most conspicuous exception, dominating the whole city, is the Mole Antonelliana. This extraordinary edifice, begun by Alessandro Antonelli (1798–1880) in 1863, more than rivals his very tall earlier dome on San Gaudenzio in Novara, designed in 1840. Never really completed, the p. 145

construction of the Mole continued intermittently down to Antonelli's death. By its great height and in some of the technicalities of its construction it rivals the Eiffel Tower and the early American skyscrapers which are posterior to it by several decades. Yet Antonelli arrived at no coherent expression of his structural innovations and, to judge from the successive purposes for which the building has been intended to serve or has served, no real capacity to provide a functionally viable building. On the whole, as its present name implies, this is a monument chiefly to its designer's megalomania.

22. See Reed, H. H., 'Rome: The Third Sack', *Architectural Review*, CVII (1950), 91–110.

p. 146 23. The third prominent edifice, surprisingly enough, is High Victorian Gothic. St Paul's, the American church, is by the English architect G. E. Street, and its curious relation to the characteristic academic blocks by Koch and his contemporaries can be appreciated on Plate 100 (see Chapter 11).

24. See Acciaresi, P., *Giuseppe Sacconi e l'operf sua massima*, Rome, 1911.

p. 147 25. The best-maintained later equivalent in northern Europe is probably the Passage, as it is called, in The Hague. Built in 1882–5, this hardly rivals the Galleria Mazzini in Genoa in length and breadth, much less Mengoni's. There are many other examples, some of them considerably later, but few are in good condition today, and none have the scale of the three principal Italian examples. For earlier French examples, see Chapter 3.

CHAPTER 9

p. 154 1. See Kreisel, H., *The Castles of Ludwig II o Bavaria*, Darmstadt [n.d.].

p. 155 2. The design derives from the results of a competition held in 1876. Of the nine architects involved in the execution of the building, Grotjan, Lamprecht, Robertson, and Martin Haller (1835–?) had won prizes in the competition. The tower is attributed specifically to the last and sometimes, more loosely, the whole structure.

p. 160 3. It should be pointed out that tall mansards allowed the addition of a full storey – sometimes even two – without increasing the height of the masonry work of the façade itself; thus there were reasons of economy as well as of fashion for their spread at this time (see Chapter 14).

4. For that matter the London Ritz Hotel, built p. 162
in 1905–6 by Mewès & Davis, is capped with a high mansard, although the vocabulary of their façades is a discreet and academic, if overscaled, *style Louis XVI* and the construction – reputedly – the first example of the use of a steel skeleton of the American skyscraper type in England.

5. Thomas Cundy II (1790–1867) died in this p. 163
year; if provided by the Estate Architects' office the designs were either initiated before his death or else they were entirely by his assistants, perhaps directed by his surviving brother Joseph (1795–1875). A. T. Bolton believed that the responsibility for the design lay with the builder Trollope; the Grosvenor Estate office, however, names not Trollope but the Cubitt firm as the builders. As with the Place de l'Opéra, the credit – or discredit – for this most notable and conspicuous piece of Second Empire urbanism remains uncertain.

6. See Poelaert, J., *Le Nouveau Palais de Justice de* p. 165
Bruxelles, Brussels, 1904.

7. Semper was in England for several years after he left Dresden as a result of the revolution that also led to Wagner's expulsion in 1848. He did no building in England, but was closely associated with Cole and his Department of Practical Art. The catafalque of the Duke of Wellington, used at the State funeral in 1852, was of his design. His Swiss period was followed by a triumphant return to Dresden to rebuild the opera-house there and his final settlement in Vienna in 1871. Since this relatively important architect appears, like Viollet-le-Duc, in unrelated contexts in several different chapters of this book, it seems well to recall here the total range of his career from its beginnings in Hamburg in the forties to its conclusion in Vienna in the seventies, passing by Dresden, London, Zurich, and Dresden a second time.

8. See Burnham, A., 'The New York Architec- p. 166
ture of Richard M. Hunt', *Journal of the Society of Architectural Historians*, XI (1952), 9–14.

9. Of course Daly's *Revue de l'architecture* reached some American architects and also his *Architecture privée* (see Note 15, Chapter 8). See also Liénard, M., *Specimens of the Decoration and Ornamentation of the XIXth Century*, Boston, 1875, although by that date the vogue for such Second Empire detailing was all but over.

10. See Walter, T. U., *Letter to the Committee on Public Buildings, in reference to an Enlargement of the Capitol* [Washington, 1850], and *Report of the*

Architect of the United States Capitol and the New Dome, Washington, 1864.

p. 167 11. See McKenna, R. T., 'James Renwick, Jr, and the Second Empire Style in the United States', *Magazine of Art*, XLIV (1951), 97–101.

p. 168 12. See Boston. Committee on Public Buildings, *The City Hall, Boston*, Boston, 1866.

13. See Bunting, B., 'The Plan of the Back Bay Area in Boston', *Journal of the Society of Architectural Historians*, XIII (1954), 19–24.

CHAPTER 10

p. 174 1. Despite the 'correctness' of Butterfield's detailing, an idiosyncratic coarsening can be noted at St Augustine's College in Canterbury and in other work by him done several years before All Saints'; yet, by contrast to other aspects of his mature style, his moulded detail remained conventional.

2. Since building Christ Church, Streatham, at the opening of the decade, Wild had been busy in Egypt. His curious St Mark's, Alexandria, as Saracenic as his detractors accused the Streatham church of being, was unhappily never brought to completion. Designed in 1842, work was suspended for lack of funds in 1848 and Wild then returned to England.

p. 176 3. Deane owed his knighthood to having been Mayor of Cork, not to his professional attainments. It would appear that Woodward did all the firm's designing and, after his death in 1861, Deane's son Thomas N. took over.

4. See Viollet-le-Duc, E.-E., *Dictionnaire raisonné de l'architecture française du XI^e^ au XVI^e^ siècle*, 10 vols, Paris, 1854–68.

5. See Mackail, J. W., *The Life of William Morris*, London, 1899.

p. 178 6. Burges designed this in 1868 in his most archaeological and articulated French Gothic manner. Construction began only in 1893, long after Burges's death, and the suave quality of the execution, so uncharacteristic of the still High Victorian date of the original design, is thereby explained; at best the design was singularly out of key with what Bodley had built.

p. 179 7. Since this is a Catholic church, and by a man who knew French Gothic architecture well, it provides the fairest possible comparison with Viollet-le-Duc's own new church of Saint-Denys-de-l'Estrée at St-Denis designed at almost precisely the same time (Plate 98). Viollet-le-Duc is world-famous; Clutton is not generally considered even in England one of the leaders of his generation; yet the superiority of the Leamington church to the St-Denis church is very considerable indeed, both inside and out.

8. See Harbron, D., 'Thomas Harris', *Architectural Review*, XCII (1942), 63–6, and Donner, P., 'Harris Florilegium', *Architectural Review*, XCIII (1943), 51–2.

9. This is spoilt externally by an unfortunate tower added by his son A. E. Street (1855–1938) in 1884–5. p. 180

10. See *The National Memorial to H.R.H. the Prince Consort* [London], 1873. p. 181

11. Scott's aspirations for architecture, in general more sympathetic than what he built, will be found in his *Remarks on Secular and Domestic Architecture, Present and Future*, London, 1858.

12. Although Woodward's death occurred in the same year 1861 that this club was begun, it is possible, even probable, that the original design was his. p. 182

13. See Nesfield, W. E., *Specimens of Mediaeval Architecture ... in France and Italy*, London, 1862. p. 183

14. The intentions of the church builders in this decade are well presented in Micklethwaite, J. T., *Modern Parish Churches, their Plan, Design, and Furnishing*, London, 1874. p. 185

15. An extraordinary example of the use of Victorian Gothic for a somewhat unexpected purpose is Columbia Market, by H. A. Darbishire (1839–1908), set down in 1866–8 among the grim housing blocks that he built for the philanthropist Angela Burdett-Coutts. See Wilson, F. M., 'Ypres at Bethnal Green', *Architectural Review*, XCVI (1944), 131–4.

16. Godwin's active and distinguished Victorian Gothic period concluded with the building of two castles in Ireland, Dromore at Pallaskenny for the Earl of Limerick in 1867–9 and Glenbegh in 1868–71. Burges was with him in Ireland when he designed Dromore, and its decorations and furnishings rival in elaboration and exceed in elegance what Burges did for Lord Bute at Cardiff and Castell Coch in these years. A row with the client for Glenbegh, who complained of drastic leakage, in which Godwin's then partner Crisp deserted him, did Godwin much harm professionally. He was still a relatively important figure in the Late Victorian seventies, but more as a decorator than as an architect (see Chapter 12).

CHAPTER 11

p. 191 1. At the Centennial Exhibition in Philadelphia the larger pavilions were all of iron and glass; and probably the most influential buildings were the British ones designed by Thomas Harris – no longer a wild 'Victorian' – in a mode closely approaching Norman Shaw's 'Manorial' mode (see Chapter 12). However, the exhibition stimulated the publication of several books on the Colonial architecture of Philadelphia which played their part in preparing the way for a 'Colonial Revival' (see Chapters 13 and 15).

2. Separate American editions of vols 2 and 3 did not appear promptly in 1853 in the way that of vol. 1 did in 1851. However, the three-volume American edition of 1861 was the first of the complete work.

3. See Tunnard, C., 'Deviation by the Brothers Potter, Collegiate Gothic at Union College, Schenectady', *Architectural Review*, CIII (1948), 67.

p. 192 4. See Note 19, Chapter 8.

5. They had, after all, first met when they were both working for R. M. Hunt.

6. See Ware, W. R., *The Memorial Hall, Harvard University*, Boston, 1887.

p. 193 7. In my book on Richardson of 1936 a later Dorsheimer plan is incorrectly associated with this Buffalo house. The house is properly identified in Hitchcock, H.-R., 'Richardson's American Express Building: A Note', *Journal of the Society of Architectural Historians*, IX (1950), 25–30.

8. This is also missing from my Richardson book, but will be found in the article cited above.

9. See Wight, P. B., 'Reminiscences of Russell Sturgis', *Architectural Record*, XXVI (1909), 123–31. It is perhaps worth pointing out that Farnam Hall, together with Sturgis's contiguous Battell Chapel of 1876 and his Durfee Hall at right angles to it, although neither are of at all comparable excellence, give this corner of the Old Campus at Yale a consistent High Victorian Gothic character interesting to study both in relation to the earlier Romantic Gothic of Henry Austin's library (now Dwight Chapel) of 1842–4 on the other side of the campus and the 'traditional' Collegiate Gothic of James Gamble Rogers's twentieth-century Harkness Quadrangle across High Street.

10. See Schuyler, M., 'The Work of William Appleton Potter', *Architectural Record*, XXVI (1909), 176–96.

11. See Holly, H. H., *Church Architecture Illus-* p. 194
trated, Hartford, 1871. Much more extreme models can be found in general compendia of architectural design published in the late sixties and early seventies.

12. See Campbell, W., 'Frank Furness, an American Pioneer', *Architectural Review*, CX (1951), 310–15.

13. See 'Another Furness Building: Provident Life p. 195
and Trust Company Building, Philadelphia', *Architectural Review*, CXII (1952), 196, and 'Provident Trust Company Banking Room, Philadelphia', *Journal of the Society of Architectural Historians*, XI (1952), 31.

14. See Withers, F. C., *Church Architecture*, New York, 1871.

15. See Upjohn, R. M., *The State Capitol, Hartford, Conn.*, Boston, 1886.

16. It was the selection of the old Trinity College property to provide a site for the new Capitol that led to the rebuilding of the college elsewhere, for which Burges provided the designs (see Chapter 10).

17. It is worth recalling that much the same could evidently be said of Fuller & Laver's San Francisco municipal group; characteristically enough for the period, this was Second Empire like their Albany Capitol, not High Victorian Gothic (see Chapter 9).

18. See Viollet-le-Duc, E.-E., *Entretiens sur* p. 197
l'architecture, 2 vols, Paris, 1863, 1872; and translations, *Discourses on Architecture*, 2 vols, Boston, 1875, 1881, and *Lectures on Architecture*, 2 vols, London, 1877, 1881.

19. The two most sumptuously illustrated publications concerning Viollet-le-Duc offer very few examples of new buildings designed by him; these must be sought in periodicals and other general contemporary sources. See *Compositions et dessins de Viollet-le-Duc*, Paris, 1884, and Baudot, A. de, and Roussel, J., *Dessins inédits de Viollet-le-Duc*, 3 vols, Paris [n.d.]

20. The most extravagant compilation of idiosyncratic detail in Viollet-le-Duc's work is to be seen on the tomb of Napoleon III's half-brother the Duc de Morny, erected in 1858 in Père Lachaise Cemetery in Paris. Hardly any element of the ornamentation is clearly referable to a particular stylistic source, and the whole effect is as 'Victorian' as anything the wildest High Victorians ever produced in England.

p. 198 21. It should not be forgotten that Street's Law Courts in London were completed only a year before Steindl began the Budapest Parliament House; but the Law Courts were, for England, extremely retardataire.

p. 200 22. Burges won the competition for this in 1857, but in the end Street received the commission and built the church in 1864–9.

23. See Meeks, C. L. V., 'Churches by Street on the Via Nazionale and the Via del Babuino', *Art Quarterly*, XVI (1953), 215–27.

p. 202 24. See Martinell, C., *La Sagrada Familia*, Barcelona, 1952, and Puig Boada, I., *El Templo de la Sagrada Familia*, Barcelona, 1952. A phenomenal number of articles have appeared concerning this church, all listed up to his date of publication (1954) by Ráfols in the later edition of his monograph on Gaudí.

p. 205 25. Mixing the elements of several styles in individual buildings provided the liveliest aspect of eclecticism at this time; the mere use of alternative modes had chiefly the effect of blurring the edges of all the styles of the past.

26. Compare, for example, Sigfried Giedion's presentation of the period in *Space, Time, and Architecture*.

CHAPTER 12

p. 206 1. Many serious and conscientious English students of this period would precede such a list with the name of George Devey (1820–86). Of Devey, in whose office C. F. A. Voysey, the most original English architect of the next generation, chose to work after completing his apprenticeship with Seddon, Voysey later wrote: 'Providentially an invitation came to enter the Office of the most extensive practitioner in homes for the Nobility and Gentry. No domestic practice has equalled his in extent before or since his death.' As in the case of William Burn, whose aristocractic practice of the forties and fifties Devey's more than rivalled in the sixties and seventies, neither he nor his clients cared for publicity, and so none of his work was published, even to the slight extent that the work of Nesfield and Webb was illustrated in the professional journals. Still today his houses are known to posterity chiefly through a few articles: Godfrey, Walter 'The Work of George Devey', *Architectural Review*, XXI (1907), 23–30, 83–8, 293–306; and 'George Devey, F.R.I.B.A., a Biographical Essay', *Journal of the Royal Institute of British Architects*, XIII (1906), 501–25.

But just as the work of Nesfield and Webb was in actuality familiar from the first to their professional friends and rivals, as also to prospective country house clients, so was that of Devey. Many of the stylistic trends so vigorously exploited by Shaw in in the seventies can be traced back to Devey's houses of the preceding decade – or so such experts on the period as H. S. Goodhart-Rendel and John Brandon-Jones, who know Devey's work intimately, always insist. Foreign students of this period, from Muthesius to the Editor of this series and this author, perhaps merely because of lack of direct or even adequate indirect knowledge of Devey's houses, have never been ready to grant him so important a place in the story. Here particularly, where the story is told in an international context, the strength of the patent influence of Shaw's work abroad even more than at home justifies giving him primacy and referring only incidentally to that of Devey.

2. Shaw did not immediately succeed Webb, p. 207
since the latter stayed on in Street's office until the middle of 1859. There must have been close contact between them over a period of up to a year, and they remained in touch from then on. Blomfield, Shaw's biographer, being himself prejudiced against Webb, underestimates the reality and the importance of this relationship. It is only one of the many errors of fact or emphasis in his book.

To quote from a private communication from Brandon-Jones concerning Shaw and Webb: 'Each must have had a good idea of the work the other was doing. Their two offices, in Gray's Inn and Bloomsbury Square, were within a stone's-throw of one another, and Lethaby while working for Shaw was in close touch with Webb and was in his spare time assisting him with the architectural work of Morris & Co. It is quite obvious from the dates of various executed works that Lethaby was carrying over Webb's ideas and details and trying them out in work he was doing for Shaw. As for the mutual respect and friendship between Webb and Shaw, I [Brandon-Jones] have recently come across a letter written at the time of Shaw's death in which he [Webb] pays a tribute to his "old friend", and I have also seen a letter from Sydney Barnsley to Sydney Cockerell in which Barnsley says that he had called on Shaw only a few months before his death and that Shaw had been talking of Webb and saying that he still treasured some photographs given him by Webb nearly fifty years earlier.'

3. Devey's incidental work at Penshurst Place in Kent, where that notable fourteenth-century manor house was restored by him, having been done more than a decade earlier, evidently prepared the way for this. It is extremely likely that Nesfield was familiar with what Devey had done there; but the line forward leads, in the late sixties, from Nesfield to Shaw, not directly from Devey to Shaw.

p. 208 4. See Pevsner, N., 'Art Furniture of the Seventies', *Architectural Review*, CXI (1952), 23–50.

5. Once again Devey had prepared the way, in this case at Betteshanger, Kent, a house built precisely ten years earlier. This will doubtless have been known both to friends of Devey's clients and to various young architects. But the Kew lodge was located where everyone could see it, even though it was not published until the nineties.

p. 212 6. For this also there was precedent at Devey's Betteshanger; but Betteshanger initiated no popular mode in the way that the conspicuous London schools by Robson and Stevenson's highly touted house did at this point.

p. 213 7. See Harbron, D., 'Queen Anne Taste and Aestheticism', *Architectural Review*, XCIV (1943), 15–18.

8. See Shaw, R. N., *Sketches for Cottages and Other Buildings* ..., London, 1878.

p 215 9. See 'The Ballad of Bedford Park', *St James's Gazette*, 17 December 1881 (reprinted by Blomfield, *Shaw*, 34–6). This is an amusing but not entirely accurate contemporary description in verse.

p. 216 10. The handling of this building in section is particularly ingenious, the area of the service portions at the rear of the flats being much increased by the use of lower storey heights than in the reception rooms at the front. This device has been revived since, but its earlier invention by Shaw has rarely been noted.

p. 217 11. At least they are now so painted; it is probable they were originally of 'white' Suffolk brick, actually a very pale yellow when newly laid and unbegrimed, but more likely to be black after a few decades of exposure to the air of London!

12. Hyde, H. M., 'Wilde and his Architect', *Architectural Review*, CIX (1951), 175–6.

13. It is characteristic of Shaw's prestige in America and the rapidity with which architectural ideas crossed the ocean at this time that Shaw's handsome perspective of the Alliance was published in America a few months earlier than in England.

14. White first approached Webb but, finding him too difficult to deal with, went to Shaw – a significant episode as regards both architects. p. 218

CHAPTER 13

1. See Webster, J. C., 'Richardson's American Express Building', *Journal of the Society of Architectural Historians*, IX (1905), 21–4, and my article cited in Note 7 to Chapter 11. p. 222

2. See Richardson, H. H., *Trinity Church, Boston*, Boston, 1888.

3. 3 vols, Paris, 1868–73. It will be noted that the last volume of this appeared after the original competition drawings for Trinity Church were prepared. The influence from Révoil began only with the later revisions made as construction proceeded in the mid seventies. p. 223

4. The source was almost certainly the book by Vogüé of which the second volume appeared only in 1877 (see Note 17, Chapter 8). The motif first appeared in the North Easton Library, designed and begun in that year. p. 224

5. See Richardson, H. H., *The Ames Memorial Building[s]*, Boston, 1886.

6. See Olmsted, F. L., and Kimball, T., *Frederick Law Olmsted*, 2 vols, New York, 1922–8.

7. See Richardson, H. H., *Austin Hall, Harvard Law School*, Boston, 1885.

8. See Richardson, H. H., *Description of Drawings for the Proposed New County Building for Allegheny County, Penn.*, Boston, 1884. p. 225

9. See Schuyler, M., 'The Romanesque Revival in New York', *Architectural Record*, I (1891), 7–38, 151–98. p. 226

10. See Bragdon, C., 'Harvey Ellis', *Architectural Record*, XXV (1908), 173–83. p. 227

11. Hunt, of the older generation, was generally recognized as a leader in this camp also, although his energies in these years were principally engaged in designing and building a series of *François I* châteaux for the Vanderbilts and other millionaires that are anything but academic in their involved picturesqueness.

This curious episode, which has been given exaggerated importance by some historians of American architecture, began with the designing of the W. K. Vanderbilt house in New York in 1879–80 (see Andrews, W., *The Vanderbilt Legend*, New

York, 1941). Other architects were also briefly affected by what was hardly more than a recrudescence of a mode popular in France under Louis Philippe in Hunt's youth (see Chapter 3).

A few houses by McKim, Mead & White of the early eighties are definitely *François I*, and Richardson used *François I* dormers, probably independently of Hunt, on the Albany Capitol. Moreover, the round towers of the 'Shingle Style' undoubtedly owe something to Stanford White's sketching trips in France. This episode obviously parallels the interest in revived Northern Renaissance modes of design in Germany, Holland, and Scandinavia in these decades, and has analogies also to the contemporary work in England of George & Peto and Collcutt (see Chapters 9 and 12).

p. 227 12. In the designing of the Sherman house – particularly in the Shavian detailing – White had probably played an important part; he was, moreover, called on by the Shermans to enlarge the house in 1881. The library, of this date, is one of his finest pieces of interior decoration.

p. 228 13. One of the earliest examples of the serious study of Colonial precedent is Arthur Little's *Early New England Interiors*, Boston, 1878. However, his own work remained relatively free for some years.

14. See *Building News*, 28 April 1882.

p. 229 15. These tiles wore out some years ago and have not been replaced. The smooth black roof seen on Plate 111 lacks the fine scale and rich texture the original pantiles provided.

p. 230 16. The conceptual organization of the exterior has seemed to most critics to have been borrowed from a much later monument, Henri Labrouste's Bibliothèque Sainte-Geneviève in Paris of the 1840s, even though McKim would not admit it. There is certainly none of Labrouste's exposed metalwork in the interior; but the extensive use of Guastavino tile vaults, at this time a real technical innovation, is worth noting.

17. See Burnham, D. H., *World's Columbian Exposition*, Chicago, 1894, and Ives, H., *The Dream City*, St Louis, 1893.

p. 231 18. The area round the 'Wooded Isle' was much less regular than that round the Lagoon in continuance of Olmsted's earlier and more naturalistic sort of landscaping. Into this area were shunted most of the buildings by local architects, doubtless because McKim distrusted their capacity to conform to the academic standards he was setting.

CHAPTER 14

1. See Note 14, Chapter 5. p. 234

2. Somewhat fuller accounts of English commercial architecture in this period will be found in Hitchcock, 'Victorian Monuments of Commerce', *Architectural Review*, CV (1949), 61–74, and in Hitchcock, *Early Victorian Architecture*, Chapters XI and XII. Most of the English buildings mentioned in this chapter are illustrated either in the book or the article.

3. See Weisman, W., 'Commercial Palaces of New York', *Journal of the Society of Architectural Historians*, XXXVI (1954), 285–302.

4. See Bogardus, J., *Cast Iron Buildings: Construc-* p. 235
tion and Advantages, New York, 1856.

5. See Hitchcock, H.-R., 'Early Cast Iron Façades', *Architectural Review*, CIX (1951), 113–16.

6. I owe this information concerning the 'Phila- p. 236
delphia Story' to Winston Weisman, who is investigating these buildings in great detail.

7. See Sturges, W. K., 'Cast Iron in New York', *Architectural Review*, CXIV (1953), 233–8.

8. See Peterson, C., 'Ante-bellum Skyscraper', p. 237
Journal of the Society of Architectural Historians, IX (1950), 27–9; X (1951), 25. The Jayne Building, begun by Johnston, was completed by Thomas U. Walter.

9. See Woodward, G., 'Oriel Chambers', *Archi-* p. 238
tectural Review, CXIX (1956), 268–70.

10. See Note 1, Chapter 13.

11. See Weisman, W., 'New York and the p. 239
Problem of the First Skyscraper', *Journal of the Society of Architectural Historians*, XII (1953), 13–20.

12. It is worth noting that neither cast-iron façades nor the vertical articulation of the Philadelphia buildings of the fifties was used in either case. Both developments of the mid century proved cul-de-sacs since the New York architects followed the established modes of the sixties for monumental buildings in these first two skyscrapers. In these same years 1873–4, however, Hunt did build the five-storey edifice at 478–482 Broadway in New York with an all cast-iron front, employing a sort of attenuated 'giant order' subsuming the three middle storeys.

13. Giedion first called attention to the import- p. 240
ance of 'balloon-frame' construction in *Space, Time and Architecture* in 1941; but see Field, W.,

'A Re-examination into the Invention of the Balloon Frame', *Journal of the Society of Architectural Historians*, II (1942), 3–29. The earliest contemporary publication of the method was in Bell, W., *Carpentry Made Easy*, Philadelphia, 1858, some quarter century after the invention.

14. See Randall, G., *The Great Fire of Chicago and its Causes*, Chicago [1871].

p. 241 15. See Hope, H., 'Louis Sullivan's Architectural Ornament', *Magazine of Art*, XL (1947), 110–17. Sullivan thought of his early ornament as somehow 'Egyptian', but it is not very easy to see why.

16. This is not the same as the Revell Store.

p. 242 17. Several more storeys were added later and appear in many of the published views.

18. One must say 'metal', because structural steel was only gradually replacing cast and wrought iron at this time; all these types of ferrous material were probably used in the Home Insurance, the Rookery, and other skyscrapers of the mid eighties. Two books by W. Birkmire, *Architectural Iron and Steel*, New York, 1891, and *Skeleton Construction in Buildings*, New York, 1893, best present the technical aspects of large-scale metal construction as it matured in the eighties and early nineties.

p. 243 19. An American edition of this book appeared in 1880.

20. I owe this suggestion to Vincent Scully.

p. 245 21. Incidentally, the signature Frank L[loyd] Wright on the drawings for a rather Richardsonian group of three masonry houses in Chicago, designed in the Adler & Sullivan office in 1888 for Victor L. Falkenau, suggests that it was Sullivan's brilliant draughtsman, as it was Jenney's assistant on the Leiter Building, who was responsible for this late example of overt Richardsonian influence.

22. The belated discovery by Condict that this building was designed and begun in 1890 has lent it an importance hardly recognized when it was believed to date from 1894, so rapid was the pace of development in these years in Chicago.

p. 248 23. It is so generally assumed that Sullivan's mature style is without historical antecedents that the even more definitely *quattrocento* character of the entrance here, as well as of those of the Guaranty Building, is rarely noted.

24. The five southernmost bays are an addition made in 1906 by D. H. Burnham & Co. They follow, with some slight diminution in the bay-width, Sullivan's original design.

The form of the Burnham firm's name in these years is significant of the increasing anonymity of architectural practice in America as the scale of operation increased (see Chapter 24).

25. Of more interest than the skyscraper is a smaller and earlier Singer Building, also by Flagg. Flagg was one American who retained contact with the French tradition of exposed metal construction as well as with the academic aspects of 'Beaux Arts' design. p. 250

26. See Schuyler, M., 'The Work of N. LeBrun & Sons', *Architectural Record*, XXVII (1910), 365–80. The Metropolitan Tower is, of course, the work of a firm not of a single architect; LeBrun himself had been dead for some years.

27. See Schuyler, M., '"The Towers of Manhattan" and Notes on the Woolworth Building', *Architectural Record*, XXX (1913), 98–122.

CHAPTER 15

1. See Note 31, Chapter 6. p. 254

2. There are many examples in various English books of the first third of the century; characteristic are those offered by T. F. Hunt, J. B. Papworth, and P. F. Robinson. p 255

3. See Note 26, Chapter 6. p. 256

4. See Note 22, Chapter 6. p. 257

5. See Note 27, Chapter 6. p. 258

6. See Note 13, Chapter 14.

7. See Note 26, Chapter 6. p. 259

8. In the *Builder* for 15 January 1859 and in the Supplement to Kerr, R., *The Gentleman's House*, 2nd ed., London, 1865.

9. Contemporaries saw this house rather as a reaction towards the 'Old English' after the 'modernism' of the High Victorian Gothic and the Second Empire of the preceding decade. How conscious Shaw himself was of the significance of his own innovations it is difficult to say. p. 261

10. The plan was first published by Muthesius in 1904; this does not mean that its character was not known to contemporary architects, however. p. 262

11. By this time photo-lithographic processes made it possible for Shaw's perspectives to appear in the *Building News* practically as facsimiles of his originals. Had it been necessary, as in the fifties and sixties, to 'translate' them into wood-engravings p 263

the transmission of the Shavian influence abroad would certainly have been much less effective.

p. 263 12. See Note 27, Chapter 6. The term 'Eastlake' is sometimes rather inaccurately used for the Stick Style.

13. See Wheeler, G., *Rural Houses*, New York, 1851, with later editions to 1868, and his *Homes for the People in Suburb and Country*, New York, 1855, with later editions to 1867.

p. 264 14. See Gardner, E. C., *Homes and How to Build Them*, Boston, 1874, and also his *Illustrated Homes*, Boston, 1875.

15. See Woodward, G. E., *Woodward's Country Houses*, New York, 1865; *Woodward's Architecture, Landscape Gardening and Rural Art*, New York, 1867; *Woodward's Cottage and Farm Houses*, New York, 1867; and *Woodward's National Architect*, New York, 1868. Of *Woodward's Country Houses* there were eight succcessive editions within a decade, thus rivalling in this period the popularity of Downing's *Cottage Residences* in the forties and fifties; however, it is worth noting that the latter still remained in print.

16. See Sturges, W. K., 'Long Shadow of Norman Shaw: Queen Anne Revival', *Journal of the Society of Architectural Historians*, IX (1950), 21–5.

17. Scully in *The Shingle Style* provides evidence that the idea of a great hall was not unknown in America well before this. It may be unnecessary to suppose that Richardson knew of the Hinderton plan, since one or two comparable ones can be found in books appearing in America in the fifties; see, for example, the Nathan Reeve house in Newburgh, N.Y., published as 'Design, No. 22' in Vaux, C., *Villas and Cottages*, New York, 1857. However that may be, the great hall theme was rarely exploited in Second Empire or Stick Style houses of the sixties. It makes a notable appearance or re-appearance, as the case may be, in Richardson's planning about 1870. Ellen W. Kramer suggests the possible influence of Louisiana plantation-house planning on Richardson.

p. 265 18. The term is Vincent Scully's. Various themes touched on in this and succeeding paragraphs are discussed at length in his homonymous volume and provided there with a full roster of illustrations.

p. 267 19. It is of interest that when the *Monograph of the Work of McKim, Mead & White* was prepared in 1915 almost all this early work was omitted. It has been rediscovered by critics and historians in the last twenty-five years, beginning with Mumford in the *Brown Decades* in 1931.

20. Just how the influence reached American p. 268
architects so early is not altogether clear. The first treatise in English on Japanese architecture is Morse, E. S., *Japanese Homes and Their Surroundings*, Boston, 1886. See, however, Lancaster, C., 'Japanese Buildings in the United States before 1900: Their Influence upon American Domestic Architecture', *Art Bulletin*, XXXV (1953), 217–24.

21. See Hitchcock, H. R., 'Frank Lloyd Wright p. 271
and the "Academic Tradition" in the Nineties', *Journal of the Warburg and Courtauld Institutes*, VII (1947), 46–63.

22. Japanese influence was more evident at the p. 272
Chauncey L. Williams house at 520 Edgewood Place in River Forest, Ill., of 1895, notably in the use of rough boulders at the foot of the brick wall and flanking the entrance. Wright by this time was enthusiastically interested in Japanese prints; whether he also knew Morse's book of 1886 (see Note 20 *supra*) is not clear.

23. This was very much extended, but along the p. 273
original lines, in 1901, as shown on Plate 128B. The present River Forest Tennis Club, a much smaller structure, is not the same, though it bears some superficial resemblance to the Golf Club. The building of 1898–1901 was demolished in 1905.

24. I am grateful to John Brandon-Jones for p. 275
allowing me to read the manuscript of his monograph on Voysey to be published by Il Balcone in Milan. Without his assistance of various sorts this account of Voysey could not have been written and illustrated.

25. See Note 1, Chapter 12.

26. The 'House at Doverscourt for A. J. W. Ward', published in the *British Architect*, 11 April 1890, was apparently never executed any more than those illustrated the previous year. It is very like Perrycroft, built in 1893, the first of Voysey's important country houses, thus suggesting that on paper his style had in fact largely crystallized by this date, before his Forster house was begun. It is of interest that the plan of the Ward project is more open than those of any of his executed houses; it may well have influenced Baillie Scott (see below).

27. Brandon-Jones suggests, however, that the very plain Regency villa in which Voysey was then living in St John's Wood may have had some generic influence on the Forster house.

p. 276 28. At Perrycroft the mullions are of wood, originally painted green. At the Forster house they were of stone, and that is true of almost all the later houses. So also the slates here were Welsh and grey; when he began to work in the Lake District he turned to green slates, earlier used by Godwin on Whistler's house. These became standard on his later houses wherever they were built.

p. 277 29. For a later tribute to his influence and that of Baillie Scott abroad, see Fisker, K., 'Tre pionerer fra aarhundredskiftet', *Byggmästaren*, 1947, 221–32; the third 'pioneer', rather surprisingly, is Tessenow (see Chapter 20).

p. 279 30. See Pevsner, N., 'George Walton, His Life and Work', *Journal of the Royal Institute of British Architects*, XLVI (1939), 537–48.

31. But Voysey was also a notable designer of wallpapers and chintzes, perhaps the most notable of his generation in England.

CHAPTER 16

p. 281 1. See Madsen's *Sources of Art Nouveau*, 75–83.

2. See Schmutzler, R., 'English Origins of the Art Nouveau', *Architectural Review*, CXVII (1955), 108–16. The question is discussed further at a later point in this chapter.

p. 282 3. See Note 3, Chapter 7.

4. The one large structure built for this exhibition in permanent form, the Palais du Trocadéro by Davioud, has since been replaced. Vaguely orientalizing in design, yet not altogether unworthy in silhouette of its splendid site on the Chaillot heights, this shared none of the qualities of Eiffel's temporary pavilion. See Davioud, G., *Le Palais du Trocadéro*, Paris, 1878. As long as it lasted, however, the Trocadéro provided a sort of pendant on this side of Paris to Abadie's Sacré-Cœur atop Montmartre, begun in the same rather dreary decade of French architectural production.

5. See Note 4, Chapter 12.

6. See Alphand, A., *L'Exposition universelle de Paris de 1889*, Paris, 1892.

7. See Eiffel, G., *La Tour de trois-cents-mètres*, Paris, 1900.

p. 283 8. Bogardus's shot-towers of the fifties in New York, which were of essentially similar construction, received little contemporary or later publicity. It is still uncertain whether Jenney knew of them when he built the Home Insurance Building in Chicago in 1883–5. See T. C. Bannister, 'Bogardus Revisited, Part II', *Journal of the Society of Architectural Historians*, XVI (1957).

9. See Note 18, Chapter 11.

10. See Grady, J., 'Bibliography of the Art Nouveau', *Journal of the Society of Architectural Historians*, XIV (1955), 18–27. p. 284

11. This applies particularly to Art Nouveau decoration; the major architectural works were frequently very plastically organized, although most of the detail was linear.

12. See Schmutzler, R., 'Blake and the Art Nouveau', *Architectural Review*, CXVIII (1955), 90–7.

13. See Lancaster, C., 'Oriental Contributions to Art Nouveau', *Art Bulletin*, XXXIV (1952), 297–310.

14. See Grady, J., 'Nature and the Art Nouveau', *Art Bulletin*, XXXVII (1955), 187–92. p. 285

15. See Mackmurdo, A. H., *Wren's City Churches*, Orpington, 1883.

16. Not perhaps impossible; there is something a little analogous to Impressionism in the work of Shaw, though he probably had no admiration for the art of Monet and his contemporaries in the seventies even if he was at all aware of it. The same is true of the American masters of the Shingle Style. The analogy lies in the casual looseness of over-all composition and the delicacy of the touch – both tile-hanging and shingles provide a certain effect of 'broken colour' – or at least 'tachiste' brushwork – even though they are usually monochrome. On the other hand, Kimball in his *American Architecture*, written a generation ago, saw an analogy to Cézanne in the return to architectural order in the mid eighties in America. There is no evidence that McKim or White then admired any French painters more advanced than Puvis de Chavannes however. p. 286

17. Fewer studio houses were built in France by leading architects than in England in the second half of the nineteenth century. However, the one that Viollet-le-Duc provided for the painter Constant Troyon in the late fifties was of notable interest – in fact, one of his best works. Moreover, the more modest *ateliers d'artiste* erected by builders provided much later, in the 1920s, precedents of value to Le Corbusier and Lurçat. See Banham, R., 'Ateliers d'artiste', *Architectural Review*, CXX (1956), 75–83.

p. 287 18. See Delhaye, J., 'Hommage à mon maître; architecte Baron Victor Horta', *L'Appartement d'aujourd'hui*, Liège, 1946, 6–17; Maus, O., 'Habitations modernes, Victor Horta', *L'Art moderne*, XX (1900), 221–3; Sedeyn, E., 'Victor Horta', *L'Art décoratif*, IX (1902), 230–42; and Madsen, S. T., 'Horta. Works and Style of Victor Horta before 1900', *Architectural Review*, CXVIII (1955), 388–92.

19. See Koch, R., and others, *Louis Comfort Tiffany 1848–1933*, New York, 1958.

20. The wallpaper was probably one of those designed by Heywood Sumner, possibly his 'Tulip' according to Elizabeth Aslin of the Victoria and Albert Museum. This was one of the considerable range of English papers shown by Jeffrey & Company at the Salon de l'Association pour l'Art d'Anvers in Antwerp in the winter of 1892–3. These papers, which included designs by most of the English leaders in the field of decorative art, had already been shown at the Paris Exposition of 1889. It is hard to believe that Horta became aware of them only when the Tassel house was nearly finished and not earlier in Antwerp or in Paris. For the Antwerp showing, see Van de Velde, H., 'Artistic Wallpapers', *L'Art moderne*, XIII (1893), 193–5. This article was copied in *L'Emulation*, XVIII (1893), 150–1, the most advanced Belgian architectural journal, where the Tassel house itself was published in 1895. It introduces the name of the other important Belgian figure besides Horta in the story of the Art Nouveau.

21. It is of interest, although irrelevant to the inception of the Art Nouveau, that in this same year Horta became professor of architecture at the Académie like Balat before him.

p. 289 22. See Kaufmann, E., '224 Avenue Louise', *Interiors*, 116 (1957), 88–93.

p. 291 23. For a late tribute to Van de Velde in English, see Shand, P. M., *Architectural Review*, CXII (1952), 143–55. It is a major error of emphasis – and in detail an accumulation of errors of fact – that H. Lenning offers in his book *The Art Nouveau* (The Hague, 1951) by accepting the legend that Van de Velde was the initiator of the Art Nouveau. There is plenty of evidence that Van de Velde was aware of English innovations in decoration from the early nineties. On the other hand, despite the wallpaper in the Tassel dining-room, it should be noted that Horta's widow and his disciple Delhaye minimize, to the point of denying all but absolutely, the dependence of Horta on English sources at the time he designed the Tassel house.

24. Paul Hankar (1861–1901) was another Belgian architectural innovator in this period. His work, however, is so crude and uneven that his name need be no more than mentioned. He is in no proper sense an exponent of the Art Nouveau. See Conrady, C., and Thibaux, R., *Paul Hankar*, [n.p.] 1923.

CHAPTER 17

1. See Gout, P., *L'Architecture au XX^e siècle et l'Art Nouveau*, Paris, 1903. p. 293

2. See Hostingue, G. d', *Le Castel Béranger, œuvre de H. G., architecte*, Paris, 1898.

3. Both the main façade and the principal interior are essentially the work of Deglane. Louvet and Thomas were more responsible for other elements of the complex structure. p. 294

4. See Uhry, E., 'Agrandissements des magasins de la Samaritaine', *L'Architecte*, II (1907), 13–14, 20, plates X–XII. p. 295

5. I owe my knowledge of this remarkable façade to Martin Kermacy. He has been unable to find out by whom and when it was built; it is apparently certain, however, that Horta himself never worked in Vienna. p. 296

6. See Note 24, Chapter 11. p. 301

7. Among other things, it is Gaudí's use of forms inspired by primitive architecture that has appealed to later twentieth-century taste. 'Primitivism' in painting and sculpture has been of recurrent importance since the days of the Fauves and the Expressionists; a comparable primitivism in architecture has been much rarer, except for Gaudí. p. 302

8. Except as regards his theories of vaulting, as exemplified in successive schemes for the Sagrada Familia and his church at Santa Coloma de Cervelló, Gaudí's technical innovations have been as yet little studied despite the very considerable literature devoted to his work. It seems probable that research will prove that he made many important innovations in structure over and above those so evident in the crypt – the only portion executed – of the Santa Coloma church. p. 303

9. While the mosaic of broken fragments of patterned ceramic on the benches at the Parc Güell suggests Cubist *collages* and even Dada compositions – notably the *Meizbilder* of Kurt Schwitters –

the handling of the coloured glass on this façade is closer to the Tachisme of the late Jackson Pollock and his imitators of the last few years.

p. 306 10. Even Gaudí after 1910 produced little, being almost wholly occupied with the slow progress of the Sagrada Familia. Of course, in a sense Horta is another exception; but his success after 1910 was of purely local significance and dependent on his total rejection of the Art Nouveau of his youth. One can only think of the later career of Giorgio de Chirico, still today a success in Italy but ignored by the outside world except when he imitates his earlier work.

CHAPTER 18

p. 309 1. See *Concrete and Constructional Engineering*, LI (January 1956). Special anniversary number reviewing the history of concrete.

2. See Baudot, A. de, *L'Architecture, le passé, le présent*, Paris, 1916, and Baudot, J. de, *L'Architecture et le béton armé*, Paris, 1916.

p. 312 3. See Huxtable, A. L., 'Progressive Architecture in America: Reinforced Concrete Construction. The work of Ernest L. Ransome, Engineer – 1884–1911' and 'Factory for Packard Motor Car Company – 1905, Detroit, Michigan, Albert Kahn, Architect. Ernest Wilby, Associate', *Progressive Architecture*, 38 (1957), 139–42 and 121–2.

Such research is revealing that Albert Kahn (1869–1942) was not such a pioneer in concrete factory construction as has been generally supposed. However, the 'Kahn Bar' developed by his brothers' engineering firm was a major technical contribution, and undoubtedly his motor-car factories were among the earliest major industrial works in the new material.

4. The detailed history of the concrete grain elevator remains to be pieced together. The prototypes for the great monuments of Buffalo, Minneapolis, and Duluth were probably French. These monolithic cylinders are, of course, very different from the motor-car factories with their post-and-lintel construction, but the history of the elevator undoubtedly runs nearly parallel to that of the factory.

p. 313 5. In the last few years the innovations of such engineers as Pierluigi Nervi in Italy and Felix Candela in Mexico have revolutionized earlier conceptions of the possibilities of ferro-concrete (see Chapter 25).

6. See Pfammatter, P., *Betonkirchen*, Cologne and Zurich, 1948. p 314

7. By reaction many of the same architects, notably Le Corbusier, have in the last few years consciously sought the brutality of industrial concrete finish – he calls it *béton brut* – even in monumental work (see Chapter 25). p. 315

8. The atelier was founded in 1928. p. 316

9. See Garnier, T., *Une Cité industrielle*, Paris [1918]. The basic project goes back to 1901, but was much elaborated in the intervening years. Although it was unpublished, many architects were certainly familiar with its general character. p. 317

10. See Garnier, T., *Les Grands Travaux de la ville de Lyon*, Paris, 1919. p. 318

11. This applies particularly to the work of Michel Roux-Spitz (b. 1888), who became in the thirties the acknowledged leader of the profession in France. p. 319

CHAPTER 19

1. See Zevi, B., *Verso un'architettura organica*, Turin, 1945; English translation, *Towards an Organic Architecture*, London, 1950. p. 321

2. See Pellegrini, L., 'La decorazione funziale del primo Wright', *L'Architettura* (1956), 198–203. p. 325

3. Wright's 'Baroque' period, running for approximately ten years from 1914 to 1924, parallels the Expressionist episode in European modern architecture (see Chapters 21 and 22). That may be considered to open with van der Meij's Scheepvaarthuis of 1912–13 in Amsterdam and to run out in general sometime in the mid twenties. It is not apparent that there was any influence of consequence either way; indeed, the effect of studying Wright's work in the war years and the early twenties was rather adverse to Expressionism and related tendencies, particularly in Holland where Wright's influence was strongest. p. 326

4. See *Life*, V (26 Sep. 1938), 60–1. p. 329

5. See *Ladies Home Journal*, February 1901; June 1901; April 1907.

6. Wright, F. Ll., *The Story of the Tower*, New York, 1956. p. 331

7. Wright has a tendency to scoff at the work of his former junior associates and to deny the reality of their discipleship. There are at present in practice a p. 332

good many architects who have been for shorter or longer periods at Taliesin, where the Fellowship has at times since the Second World War included over sixty. Those who were at Taliesin some time ago have naturally made the greatest mark, since most of the post-war members of the Fellowship are only beginning their own practice. Alden Dow (b. 1904) in Midland, Michigan, and Henry Klumb (b. 1905) in San Juan, Puerto Rico, have over the last few years the greatest volume of work of more-or-less Wrightian inspiration to their credit. But it must not be forgotten that Richard J. Neutra (b. 1892), whose work is of a very different order, was also for a time with Wright; while there are some architects whose work is Wrightian to the point of parody who have never had any direct contact with Wright at all.

p. 332 8. Richard E. Schmidt (b. 1865) and Hugh M. G. Garden (b. 1873).

9. The contribution of these men is only beginning to receive the study which it merits now the realization is growing that American architecture was far less dominated by traditionalism in the first quarter of the twentieth century, particularly in the Middle West and on the Pacific Coast, than has generally been supposed in the last thirty years.

10. See Thompson, E., 'The Early Domestic Architecture of the San Francisco Bay Region', *Journal of the Society of Architectural Historians*, x (1951), 15–21. Jean Murray Bangs has for some time had in preparation monographs on the work of Maybeck and of Greene & Greene; see her articles 'Bernard Ralph Maybeck, Architect, Comes into His Own', *Architectural Record*, CIII (1948), 72–9, and 'Greene and Greene', *Architectural Forum*, LXXXIX (1948), 80–9.

p. 333 11. See Price, C., 'Panama–Californian Exposition: Bertram Grosvenor Goodhue and the Renaissance of Spanish-Colonial Architecture', *Architectural Record*, XXXVII (1915), 229–51.

12. See Macomber, B., *The Jewel City, its Planning and Achievement...*, San Francisco, 1915.

p. 334 13. Clay Lancaster's article on the pedigree of the California Bungalow will appear shortly in the *Art Bulletin*.

14. That is, on the West Coast; considered as an alternative to the 'International Style' suitable for emulation everywhere, as it was for a few years, it has no more validity than any other regional mode.

CHAPTER 20

1. The influence of Expressionism swept across p. 336
German architecture in the years 1919–21, affecting many architects both young and old. It will be necessary to revert to the subject, therefore, when discussing the modern architects of the second generation. However, it was the older architects who found this sort of 'modernism' most sympathetic and who exploited it longest.

There remains some question of the propriety of the term 'Expressionism' as applied in architecture. At best it is as loose a reference to a parallel, but earlier established, pictorial mode as is 'Impressionism' when used by musicologists for the art of Debussy and Delius. But the term is well established, and no better alternative has been proposed.

2. For the development of Van de Velde's ideas p. 337
in these years see *Die Renaissance im modernen Kunstgewerbe*, Berlin, 1901, and *Vom neuen Stil*, Leipzig, 1907. Van de Velde was a prolific writer, and it is impossible to give a complete list of his books and articles here. They will be found in Madsen's *Sources of Art Nouveau*, 469.

3. See Bauer, C. K., *Modern Housing*, Boston p. 340
and New York, 1934; and my *Early Victorian Architecture in Britain*, Chapters XIII and XIV.

4. See Schumacher, F., *Das Wesen des neuzeit-* p. 341
lichen Backsteinbaues, Munich, 1917. The rich and decorative use of brick is as characteristic of the Hamburg School as of the Amsterdam School in these decades (see Chapter 21).

5. See Bie, O., *Der Architekt Oskar Kaufmann*, p 343
Berlin, 1928; Hegemann, W., *German Bestelmeyer*, Berlin [n.d.]; and Mayer, H., and Rehdern, G., *Wilhelm Kreis*, Essen, 1953. In the twenties a large number of such well-illustrated monographs on individual German architects were published; it is much more difficult to find adequate documentation on the work of several architects in other countries who are of considerably greater originality and historical importance.

6. Paraboloid domes of ferro-concrete were used p. 345
with brilliant spatial effect by Jacques Droz (b. 1882) at Sainte-Jeanne-d'Arc in Nice. This was built in 1932, just at the same time that Böhm was building Sankt Engelbert. The plan, consisting of three intersecting ellipses, is very nearly identical with that of J. B. Neumann's Baroque masterpiece Vierzehnheiligen; the result is very different,

however, because of the continuity of the walls and roof here. Unfortunately Droz's church was elaborated with a tower and other features of a rather 'Jazz-Modern' order.

7. Another German church-architect of the twenties who has still a very considerable reputation is Otto Bartning (b. 1883). He moved much earlier in this direction than Böhm. For a statement of his intentions, see Bartning, O., *Vom neuen Kirchbau*, Berlin, 1919.

8. See *Maria Konigin* [Cologne, n.d.].

p. 346 9. This is not the place to discuss these churches. It may be remarked here, however, that Candela's newly completed church is considerably more Expressionist in appearance, especially the interior, than anything Böhm ever built in the twenties. Yet its strangely angular piers and vaults that *look* so much like the settings for the 'Cabinet of Dr Caligari', the most famous German Expressionist film, result from this engineer's consistent use of the hyperbolic paraboloid forms which he favours primarily for technical reasons. De la Mora, Niemeyer, and Moya have been content to use barrel-vault elements of plain parabolic section such as were first introduced by Böhm in 1925.

10. The triangular bay-window lighting the stairs is still somewhat Expressionist, but the interior treatment is in general more related to geometrical abstract art. The decoration approaches what came to be known as 'Jazz-Modern' when it became vulgarized in the next ten years or so in England. The contrast of the interiors that Behrens designed with the fine examples of Mackintosh's furniture, brought from a house that he had remodelled earlier for the Bassett-Lowkes, appears rather shocking thirty years later. What must have been considered a bit *démodé* in 1925 now represents to posterity – at least in the field of furniture design – the main line of advance in the early twentieth century; what then seemed in England to be 'the last word' has dated badly.

p. 347 11. Undefinable; but a generic term for the advanced movements that succeeded Expressionism in the arts.

CHAPTER 21

p. 349 1. The use of aluminium in architecture became widespread only some forty years later, it should be noted, although it had supplied the cap of the pyramid with which T. L. Casey finally completed the Washington Monument as early as 1884 – its first use in architecture. In the nineties Thomas Harris already foresaw its great importance in building; see his *Three Periods of English Architecture*, London, 1894.

2. See 'Ornament und Verbrechen' in Loos, A., p. 352
Trotzdem: Gesammelte Aufsätze 1900–1930, Innsbruck, 1931, first published in the *Neue Freie Presse* in January 1908. A French translation of the article appeared in *L'Esprit nouveau*, 1 (1920), 159–68.

3. Considering that Wright's open planning had by no means matured while Loos was in Chicago, American influence (if any) came probably from the houses of the Shingle Style. Because of his close *rapport* with England, however, one may assume that the influence of Baillie Scott's plans was more important; while the treatment of interior trim comes closest to Voysey's, as has been noted.

4. The recurrent suggestions of Richardsonian p 356
influence in Europe in the nineties are hard to explain. Townsend in England knew of Richardson's work from American publications, and there was in England one house by Richardson, Lululund at Bushey, Herts, now largely destroyed except for the entrance. This was designed shortly before Richardson's death for Sir Hubert von Herkomer, who had painted his portrait, and executed without supervision. The Swede Boberg had been for a short while in America; but there are others whose work seems somewhat Richardsonian, such as Theodor Fischer, who certainly had not. Berlage, perhaps the most 'Richardsonian' of all Europeans in the late nineties, did not visit America until 1911, when it was Wright's work that most impressed him. He may, of course, have known Richardson's buildings fifteen years before that from publications, as in the case of Townsend. The most one can properly say is that a Romanesquoid phase, little related to the earlier European *Rundbogenstil* but paralleling to some extent the Richardsonian of the eighties in America, is a recognizable aspect of the architecture of several countries in the nineties. It took form just as the Richardsonian ceased, with the triumph of academic reaction, to be current across the Atlantic.

5. See Berlage, H. P., *Gedanken über den Stil in* p. 357
der Baukunst, Leipzig, 1905; *Grundlagen und Entwicklung der Architektur*, Amsterdam, 1908; German ed., Berlin, 1908; and *Studies over Bouwkunst*, Rotterdam, 1910.

6. The work of K. P. C. de Bazel (1869–1923), a pupil of Cuijpers who represents a rather different stream in Dutch architecture of the early twentieth

century, is especially close to that of the contemporary German leaders but hardly at all related to Expressionism. His massive office building for the Nederlandse Handel Maatschappij in Amsterdam of 1917–23 is quite similar to Behrens's nearly contemporary office blocks in Hanover and Düsseldorf, but much more intricate and inventive in its brick-and-stone detail.

p. 358 7. Although it is unlikely that de Klerk actually owed anything to the sets that Bakst, Benois, and others were designing for the Ballet Russe, the visual investiture of the Diaghilev productions certainly had a loosening effect on Western European taste in these years just before the First World War. For the first time Russia impinged visually on European art, but that impingement had only an oblique effect on architecture, for the art that was exported was not, of course, very architectural.

p. 360 8. See *American Architect*, CXXVIII (5 October 1925).

p. 361 9. See 'The American Radiator Company Building, New York', *American Architect*, CXXVI (1924), 467–84.

p. 362 10. It is this that makes it so difficult to decide which architects should be discussed in Chapters 18–21 and which in Chapter 24. No two critics will agree, but most recognize that the boundary line is not a sharp one. For this reason in *Modern Architecture*, published thirty years ago, I labelled the work of this generation 'The New Tradition' and did not then reject the work of the Scandinavians as too 'traditional' to be classed, broadly at least, with that of Wright, Perret, Behrens, Wagner, and Loos, as I have done here.

CHAPTER 22

p. 363 1. That is, Barr proposed the title *The International Style* for the book prepared by myself and Philip Johnson to go with this Exhibition, drawing the word 'international' from the title of Gropius's *Internationale Architektur*. For various reasons the name 'International Style' has often been castigated since 1932; yet it is still recurrently used, with or without apology, by many critics – even by some who object to the very idea of 'style' in modern architecture! The term is, for example, used in English and in a rather unflattering sense by Gillo Dorfles in *L'Architettura moderna* – one chapter is entitled '"L'International Style" ed i nuovi regionalismi' – with no indication of its origin. Since this term has by now rather generally acquired a pejorative meaning, I have avoided using it as far as possible in this book, preferring the vaguer but less controversial phrase 'modern architecture of the second generation' despite its clumsiness. That the original meaning of 'International Style', as used by Barr, Johnson, and myself, retains some validity must be an *ex parte* conclusion; but see my article, 'The "International Style" Twenty Years After', *Architectural Record*, CX (1952), 89–97.

2. See Roggero, M. F., *Il Contributo di Mendelsohn alla evoluzione dell' architettura moderna*, Milan [1952].

3. See Jaffé, H. L. C., *De Stijl, 1917–1931*, London [1956], and Zevi, B., *Poetica dell' architettura Neoplastica*, Milan, 1935.

4. See Mendelsohn, E., *Bauten und Skizzen*, Ber- p. 364
lin, 1923; and English ed., *Buildings and Sketches*, London, 1923.

5. The whole question of Expressionism in architecture is still a difficult one despite a renewed critical interest in the intentions and achievements of the architects influenced by the movement; see, for example, Dorfles, G., *Barocco nell'architettura moderna*, Milan [1951], especially the second part. As has been noted in the previous chapter, where something was said of the impingement of Expressionism on Behrens and the work of more convinced Expressionists such as Höger and Poelzig, the influence of Expressionism on German architecture was not confined to members of their generation. As will shortly be noted, Gropius and Mies van der Rohe were both briefly affected by Expressionist concepts and used forms of distinctly Expressionist character in the years 1919–21.

6. See Steiner, R., *Wege zu einem neuen Baustil*, Dornach, 1926. An earlier Goetheanum had been of timber and was not at all like Mendelsohn's Einstein Tower.

7. For a late reassessment of that influence, see Jordan, R. F., 'Dudok', *Architectural Review*, CXV (1954), 237–42.

8. It is probable that Mendelsohn's early projects and also the tower had some influence on the later development of 'streamlining' in industrial design. See Banham, R., 'Machine-aesthetic', *Architectural Review*, CXVII (1955), 224–8.

9. This sort of enclosure has come of late to be p 365
called a 'curtain-wall'. Some of the skyscrapers of the nineties in Chicago, most notably Beman's Studebaker Building of 1895 and Holabird &

Roche's McClurg Building of 1899, approached it very closely, yet in them the actual supporting piers remained in the façade plane as at the Fagus Factory and thus the 'curtain' was interrupted, not continuous horizontally. The first true example of the curtain-wall applied to a large urban structure followed within a few years after the Fagus Factory, and certainly with no influence from it; this is the Hallidie Building in San Francisco, completed by Willis Polk (1867–1924) in 1918 immediately after the First World War.

10. See Note 12, below.

11. See Popp, J., *Bruno Paul*, Munich [n.d.].

p. 366 12. To those historians of modern architecture who find its relevant prehistory largely in the technical developments of the previous century and a half, the Fagus Factory is the more important; to those who accept that the architecture of the mid twentieth century has aesthetic as well as technical roots, the special 'Classicism' of Mies's project, like Wright's contact with the American 'Academic Tradition' of the nineties, will perhaps seem at least important. The thesis of the late Emil Kaufmann, adumbrated in a series of books from his *Von Ledoux bis Le Corbusier* of 1931 to his posthumous *Architecture in the Age of Reason* of 1955, stresses – indeed overstresses – the relevance of the theories and projects of the revolutionary architects of the late eighteenth century to the new architecture of the twentieth century. If it ever becomes possible to subsume historically under a single rubric the 'traditional' and the 'advanced' architecture of the first quarter of the twentieth century, the 'Classicism' and 'Academicism' of Wright, Wagner, Mies, and Le Corbusier as well as of Perret and Behrens will prove as significant as the technical feats of those architects who erected the last great railway stations in these years and the tallest skyscrapers. Lest the issue seem a simple dichotomy, Mies's respect for Berlage's structuralism should also be remembered at this point; as also the Expressionism which influenced both Gropius and Mies after the First World War, not to speak of Wright's 'Baroque' phase of 1914–24.

13. Le Corbusier's first publication was an *Étude sur le mouvement d'art décoratif en Allemagne*, La Chaux de Fond, 1912, giving evidence of his closer *rapport* with Central European than with Parisian currents at this point in his life.

14. It is curious that neither Le Corbusier nor any of those who have written on his work have ever published this house, still extant and in excellent condition. The same is true of a cinema at La Chaux de Fond which must be several years later in date.

15. Le Corbusier's relations with Loos were very close for a year or two after Loos settled in Paris in 1923. But he undoubtedly knew of Loos's work well before the First World War, having been for a short time in Vienna in 1908, at which time he had already begun to react against the dominant decorative emphasis in the work of Hoffmann and the Wiener Werkstätte.

16. As has been noted, Garnier's book on the 'Cité Industrielle' did not appear until 1918, but his projects had long been generally known in Paris. His work attracted more attention in the early twenties, thanks to his own publication *Les Grands Travaux de la ville de Lyon*, Paris, 1919, and an article by Jean Badovici, 'L'Œuvre de Tony Garnier', in *L'Architecture vivante*, Autumn-Winter 1924.

17. See Note 12, *supra*.

18. See Note 3, *supra*. Also relevant is my book *Painting towards Architecture*, New York, 1948.

19. The date 1921, often given in Dutch publica- p. 367
tions of the twenties, is queried by Reyner Banham, who believes it as much as two years too early. Oud's building superintendent's Office at Oud Mathenesse of 1923 was only a temporary structure. The latter, but not the Rietveld shop-front, is mentioned by Jaffé.

20. The first number is not dated and may have appeared in 1919.

21. See Bayer, H., and others, *Bauhaus 1919–28*, New York, 1938.

22. The effect of van Doesburg's visit to Ger- p. 368
many remains controversial. Although Gropius denies, or at any rate minimizes, its importance to the Bauhaus group – and, indeed, personally disliked van Doesburg – critics and historians mostly believe the influence of Neoplasticism to have been at least as significant at this point as that of the Russian Constructivists. See Zevi, B., 'L'Insegnamento critico di Theo van Doesburg', *Metron*, VII (1951), 21–37.

It is not without significance that Gropius included in 1926 Oud's *Holländische Architektur* in the series of Bauhausbücher which he edited. That certainly proves a special respect for the *De Stijl*-nurtured modern architecture of Holland at the time.

p. 369 23. Like Le Corbusier's window-walls, these horizontal strip-windows, usually called 'ribbon-windows' in English, can be traced back at least as far as Shaw's work of the sixties, though all the intervening links are not yet clearly identified. Their analogy with 'Chicago windows' is closest and, indeed, Sullivan's Carson, Pirie & Scott façades, with their wide windows crisply cut in the smooth terracotta wall-plane, are amazingly premonitory of the characteristic new window-banded façades of the twenties; for before this time window-strips were always subdivided by relatively heavy mullions in the plane of the wall, as in Voysey's houses, or set behind ranges of colonnettes or other supports, as they were still in the clerestory of Wright's Unity Church.

p. 370 24. This special vision of America is well illustrated in books of the twenties by European architectural visitors; see Mendelsohn, E., *Amerika. Bilderbuch eines Architeketen*, Berlin, 1926, and Neutra, R., *Wie baut Amerika?* Stuttgart, 1927.

25. The preoccupation with the shapes of things that move – which architecture does not – reflects doubtless the motion-aesthetic of the Futurists. Whether Le Corbusier knew the pre-war projects of the brilliant Italian Antonio Sant'Elia is not clear. But his own aesthetic is less related to the particular forms found in Sant'Elia's designs for buildings than to generalized Futurist dreams of speed and technical modernity. See also Note 10 to Chapter 23.

26. However, Le Corbusier's sketch books make evident that he had used his eyes to advantage on a very wide range of buildings in the Mediterranean world on his early travels, from peasant huts to the Parthenon, the Campidoglio, and Versailles. His attitude towards the past was very different, evidently, from that of the Futurists, of which a somewhat closer reflection is to be found in the doctrines of Gropius even today.

27. Throughout this period, and indeed down to 1943, Le Corbusier practised in partnership with his cousin Pierre Jeanneret (b. 1896); technically most of his work should therefore be attributed to 'Le Corbusier & Jeanneret'. No attempt has yet been made by critics or historians to determine to what extent Jeanneret deserves credit for the work of the firm, nor to evaluate the work he has since done independently.

28. The open plan of the Vaucresson house was more significant than the treatment of the exterior; that was 'scraped' of all features in a Loos-like way, yet still quite symmetrical.

The studio-house for Ozenfant, built on a very restricted corner site, was too special in its vertical organization to be very influential. Although today in good general condition, the very 'industrial' saw-toothed skylights on the roof have been removed and the terrace surrounded with a crude railing.

29. Confused by Le Corbusier's description of his houses as *machines à habiter* and the general 'machinolatry' of much of his early writing, many have mistakenly supposed that his was a machine-aesthetic. Just how to define his aesthetic other than by begging the question and merely calling it 'Corbusian' is, however, far from clear. For an analysis stressing Le Corbusier's 'formalism', but not in the pejorative sense of Stalinist criticism, see Rowe, C., 'Mannerism and Modern Architecture', *Architectural Review*, CVII (1950), 289–300.

30. Le Corbusier's personal system of proportion, p. 371
first used for the 1916 house, gradually crystallized into a very detailed mathematical scheme which was made generally available in his book *Le Modulor*, Boulogne-sur-Seine, 1950; American ed., Cambridge, 1954.

31. See Moussinac, L., *Robert Mallet-Stevens*, p. 372
Paris, 1931.

32. See *André Lurçat, projets et réalisations*, Paris, 1929.

33. In this connexion Schumacher's school-building programme for Hamburg, initiated considerably earlier, is also significant.

34. See Le Corbusier, *Une maison – un palais*, p. 373
Paris, 1928.

35. As building activity increased in Russia in the late twenties there was considerable experimentation, mostly along Constructivist lines, and a growing acceptance of the new architecture of the western world. This continued into the early thirties. But the competition for the Palace of the Soviets of 1931, to which Le Corbusier and Gropius as well as Poelzig and Mendelsohn were among the over two hundred architects who contributed projects, represented a major turning point. This was won by the Soviet architect B. M. Iofan (b. 1891) with a very monumental scheme designed in a variant of that megalomaniac mode of scraped Classicism which had been popular for large-scale architecture in Germany under the Second Reich and which returned to favour in 1933 under the Third Reich, just after

Iofan's scheme triumphed. By 1937 this relatively severe project had been elaborated by Iofan and his collaborators W. G. Helfreich and V. A. Schouko until it rose – and to the same tremendous height as the Empire State Building in New York – like a telescopic wedding-cake, terminating in a statue of Stalin a third as tall as the whole structure below.

Henceforth the 'scraping' of Classical forms ceased and Stalinist architecture in general aimed at an elaboration that was at once Baroque and Victorian in its coarse exuberance and in its illiterate use of academic clichés all but forgotten in the western world. During the later Stalinist period official Soviet criticism decried the modern architecture of the western world as a manifestation of 'bourgeois formalism'.

At the time of writing it is not clear whether the end of that period and the current denunciation of its architecture by later Soviet leaders implies a return to the close contact with advanced western ideas which was so evident in the twenties and early thirties. For the production of the Stalinist period, which would rate anywhere else as very low-grade 'traditional' architecture, see *Dreissig Jahre sowjetische Architektur in der RSFSR*, Leipzig, 1950.

p. 374 36. More than rivalling Gropius's housing in its extent was that carried out by Ernst May (b. 1887) for the city of Frankfort at this same time.

37. Gropius and Meyer first used a smooth rendered surfacing on a theatre at Jena that they remodelled in 1922; this was not otherwise very significant, except that no trace of Expressionist influence, still strong in work of the year before, remained. As will appear shortly, Mies van der Rohe proposed to use brick in a design for a country house in 1922; and all the private houses he built in the twenties are of that material, though his housing blocks at Berlin and Stuttgart were rendered.

p. 375 38. Although Mies is not, as his second name van der Rohe might suggest, Dutch, he has always been an admirer of Berlage, and his very high standards for brickwork derive from his knowledge of Dutch building, both old and new, acquired during the year spent in The Hague designing the Kröller house.

p. 377 39. Much of Le Corbusier's prolific writing of the twenties has already been mentioned in the text and earlier notes; for Gropius's, see Cook, R. V., *A Bibliography: Walter Gropius, 1919–1950*, Chicago [1951].

40. For example, the German translation of *Vers une architecture* appeared in 1926; the English translation in 1927 in both English and American editions. Of *Urbanisme*, the American edition is of 1927, the English of 1929, and the German of 1929 also. Mies wrote, in effect, nothing at all.

41. As has been noted, Oud, at the invitation of Gropius, wrote *Hollandische Architektur* (No. 10 in the series of Bauhausbücher) and also published many articles in Dutch, German, English, and French magazines.

CHAPTER 23

1. See Note 1, Chapter 22. p. 380

2. Le Corbusier's moulded *pilotis* supporting the p. 381
Swiss Hostel in Paris (Plate 165B) are two years later; those under the Unité d'Habitation, which resemble Aalto's much more closely, were designed after the Second World War.

3. A hospital built in 1926–8 by Adolf Schneck and Richard Döcker (b. 1894) in Stuttgart is actually earlier but by no means comparable in quality.

4. For Howe's earlier 'traditional' work see *Monograph of the Work of Mellor, Meigs and Howe*, New York, 1923; for an assessment of his later career, see Zevi, B., 'George Howe', *Journal of the American Institute of Architects*, XXIV (1955), 176–9.

5. The same description applies roughly to Aalto's work down to the buildings mentioned above, it may be noted.

6. See Jordan, R. F., 'Lubetkin', *Architectural Review*, CXVIII (1955), 36–44.

7. Technically the architects were J. Alan Slater p. 382
and Arthur Hamilton Moberly (1885–1952) with Crabtree as designing associate. Professor Sir Charles Herbert Reilly (1874–1948), head of the School of Architecture at Liverpool, which he made one of the most advanced schools in the world in these years, was consultant. It is curious to recall that he had earlier been a consultant on Devonshire House in Piccadilly in London, built in 1924–6 by Carrère & Hastings (John M., 1858–1911; and Thomas, 1860–1929), when the influence of American 'traditional' architecture was strong in London (see Chapter 24).

p. 382 8. Amyas Douglas Connell (b. 1901), Basil Robert Ward (b. 1902), and Colin Anderson Lucas (b. 1906); see also Note 9 to this chapter.

9. For the late twenties and early thirties, when the newer architecture first penetrated England, see Pevsner, N., 'Nine Swallows – No Summer', *Architectural Review*, XCI (1942), 109–12, and Hitchcock, H.-R., 'England and the Outside World', *Architectural Association Journal*, LXXII (1956), 96–7 (this is a special number of the *Journal* devoted to the work of Connell, Ward & Lucas, 1927–39).

10. If Expressionism in architecture is an episode difficult to assess despite the real achievement of several of the architects involved with it (see Chapters 20 and 22), Futurism is impossible to evaluate at all since it was only a 'might have been'. Italian modern architecture since the thirties does not derive from the projects of Sant'Elia, many of which are only now being published for the first time. Sant'Elia and the other architects associated with Futurism wished to cut all links with the past, Terragni re-linked the 'International Style' – usually called *architettura razionale* under the Fascist regime – with Italian tradition, a line which several Italian modern architects have followed since. See Sartoris, A., *Sant'Elia e l'architettura futurista*, Rome, 1943; Banham, R., 'Sant'Elia', *Architectural Review*, CXVII (1955), 295–301; Tentori, F., 'Le Origini liberty di Antonio Sant'Elia', *L'Architettura*, I (1955), 206–8; and Banham, R., 'Futurism and Modern Architecture', *Journal of the Royal Institute of British Architects*, LXIV (1957), 129–38.

p. 383 11. See Le Corbusier, *UN Headquarters*, New York, 1947.

12. See Rudolph, P., 'Walter Gropius et son école', *L'Architecture d'aujourd'hui*, XX (1950), 1–116.

13. Credit for initiating the reform at Harvard must be given to the Dean of the school there, Joseph Hudnut (b. 1886), who invited Gropius to join his faculty.

14. Louis Skidmore (b. 1897), Nathaniel Owings (b. 1903), John O. Merrill (b. 1896).

15. Ralph Rapson has become Dean of the School of Architecture at the University of Minnesota, it is relevant to note at this point.

p. 385 16. See Le Corbusier, *The Marseilles Block*, London, 1953.

p. 386 17. See Le Corbusier, *Œuvre complète*, [VI, 1957], 50–107.

18. See Stirling, J., 'Ronchamp', *Architectural Review*, CXIX (1956), 155–61. The best coverage is in Le Corbusier, *Œuvre complète*, [VI, 1957], 16–43, however.

19. In collaboration with the French architect p. 388
B.-H. Zehrfuss and the Italian engineer Pierluigi Nervi.

20. For Gropius's latest published statement of his principles, see *The Scope of Total Architecture*, New York, 1955, London [1956], although there is little there not to be found already in his other writings of the last thirty-five years. See also Note 39 to Chapter 22.

21. Curiously enough Philip Johnson's glass p. 389
house in New Canaan, Conn., which obviously derives in several ways from the Farnsworth house, was actually erected first, in 1949; but of course Mies's plan and model of the Farnsworth house had already been published by Johnson in his book *Mies van der Rohe* in 1947.

22. Although their design follows closely that of p. 390
the two blocks built in 1949–51, the construction is actually of ferro-concrete, not steel.

23. Thanks to the continuance in the early post- p. 391
war years of the reaction of the thirties, the buildings at the south end of the Coolsingel appear to present a curious inversion of chronology. While Dudok's Bijenkorf Department Store of 1929–30, now being demolished to open the view to the harbour, is characteristic of the ambiguity of much of his work, this 'baby skyscraper' of 1939–40 and also the contiguous Exchange by J. F. Staal (1879–1940), designed in 1929 and built in the thirties, appear much more 'modern' to mid-century eyes than the first big banks and so forth rebuilt after the war – these look as if they had been designed at least a generation ago. But the wave of reaction seems to have run its course; the Lijnbaan of 1953–4, a complete shopping street by van den Broek & Bakema running parallel to the Coolsingel, and the new Bijenkorf by Marcel Breuer (b. 1902) of 1955–7 are among the most advanced buildings erected anywhere in the last few years.

24. Oud's prominent Resistance Monument on the Dam in Amsterdam opposite the Royal Palace, completed in 1956, is hardly a work of architecture but rather an enlarged pedestal and frame for sculpture. Such a commission and the honorary doctorate he received in 1955 from the University of Leiden none the less indicate the respect he receives today in Holland.

25. See Note 1 to Chapter 24.

CHAPTER 24

1. 'Historicism' is a clumsy term matched by no viable adjective. It does, however, express more accurately than 'traditionalism', 'revivalism', or 'eclecticism' a certain aspect of architecture which was common throughout the last five hundred years, and not unknown in early ages. Quite simply, it means the re-use of forms borrowed from the architectural styles of the past, usually in more or less new combinations. It is late in this book to introduce a definition; but historicism is always so much taken for granted in discussing the architecture of the nineteenth century that it is only after the appearance of the alternative of an exclusive modernism, rejecting all borrowed forms, that the older attitude needs to be isolated in order to discuss its continuance in this century. Characteristically, the architecture of two-thirds of the period covered by this book balanced a moderate sort of modernism with more or less of historicism. This is as true of most of the novel projects of Ledoux in the 1780s as it is of a large part of the work of the first generation of modern architects. However, only the traditional architects remained firmly attached to the concept of historicism in the twentieth century; men like Behrens and Perret were, through much of their careers at least, in highly significant revolt against it, quite as Ledoux had been in his day.

p. 398 2. The decline is perhaps to be related at its start with the death of their associate Joseph M. Wells in 1891. Never a member of the firm, he had nevertheless been personally responsible for the design of the Villard houses (Plate 109B) that had opened the academic phase of the firm's career. Later, the death of White and the retirement of McKim in the early years of the new century removed the two controlling personalities from the firm. Henceforth the office was a 'plan-factory', with high professional standards undoubtedly, but without direction other than that already established in the late eighties and nineties by the founders.

p. 399 3. J.-L. Pascal (1837–1920), a pupil of Gilbert who had worked with Garnier on the Opéra and succeeded Labrouste at the Bibliothèque Nationale, had at least as high a reputation, and was the teacher of several prominent English and American architects. His severe academic style, emulated later by his Anglo-Saxon pupils, was well established by the time he designed the Faculty of Medicine at Bordeaux in the early nineties. Nénot was one of Pascal's French pupils.

4. William Adams Delano (b. 1874) was a pupil of Laloux; Chester Holmes Aldrich (b. 1878) was also trained at the École des Beaux-Arts.

5. The controversy as to which firm should receive credit for the design of the Grand Central Station once waxed hot. The organization of the tremendous complex was probably the work of Charles A. Reed (?–1911) and Allen H. Stem (1856–1931), who had already built other big stations in Troy, N.Y., in 1901–4 and in Tacoma in 1909–11 – as, moreover, their successors, Felheimer & Wagner, have done also: Buffalo and North Station, Boston, both begun in 1927, and Cincinnati in 1929–33. Whitney Warren (1864–1943) and Charles D. Wetmore (1866–1941), who also worked with Reed & Stem on the Detroit station completed in 1913, were doubtless more responsible for the dignified and well-scaled detailing. See Marshall, D., *Grand Central*, New York, 1946. p 400

6. Books of the period, such as *American Architecture* of 1928 by the distinguished architectural historian Fiske Kimball, or *American Architecture of Today*, also of 1928, by the then Dean of the Harvard University School of Architecture, G. H. Edgell, offer the later writer very little assistance. Kimball in the twenties was too ready to consider the continuance of the academic tradition assured – his chapter on Sullivan and Wright was entitled 'The Lost Cause' – while Edgell offers such a miscellany of buildings that no clear picture emerges. Several attempts within the period to select its major monuments fixed on much the same lot as are given prominence here; but such selections hardly help to organize the work of the day in historical terms.

7. See Weisman, W., 'Towards a New Environment: the Way of the Price Mechanism; the Rockefeller Centre', *Architectural Review*, CVIII (1950), 399–405; and 'Who Designed Rockefeller Center?', *Journal of the Society of Architectural Historians*, X (1951), 11–17. p 401

8. This firm were the successors of Richardson, and Henry Richardson Shepley, now its head, is Richardson's grandson.

9. 'Compositionalism' has been suggested by Colin Rowe as a name for the style-phase with which this section deals. Composition was then conceived by many architects and theorists as an p. 402

absolute to which the re-use of any sort of stylistic forms could be accommodated. It is at least open to suspicion, for example, that Rogers's Pierson College at Yale was designed originally with Gothic forms and then re-cast as Neo-Georgian. Later eyes than our own will doubtless find it possible to identify the period characteristics of traditional work of the twenties in the way many critics already feel able to do with the nineteenth-century revivals. The period-designation 'President Harding' may some day perhaps be as meaningful as 'General Grant', if hardly comparable to 'Victorian'!

p 402 10. Harvey Wiley Corbett (b. 1873), a pupil of Pascal at the École des Beaux-Arts, was probably the designer.

11. Carrère was dead by this time, but the firm name remained unchanged; as has been mentioned earlier, Professor Sir Charles Reilly was consultant, and he probably made some real contribution to the design.

12. C.-F. Mewès (1858–1947) and Arthur Joseph Davis (1878–1951), both pupils of Pascal, like Corbett.

13. Gropius is very insistent on the desirability of anonymous teamwork in architecture. His TAC, the one-time Tecton group in London, and other firms with similar names are examples of this ideal which aims, of course, at something rather different from the anonymity of the larger commercial firms. Theirs is fact rather than ideal.

p. 403 14. See Weisman, W., 'Group Practice', *Architectural Review*, CXIV (1953), 145–51.

p. 404 15. Sir John J. Burnet (1857–1938), another pupil of Pascal at the École; Thomas S. Tait (1882–1954).

p. 405 16. See Pevsner, N., 'Building with Wit; the Architecture of Sir E. Lutyens', *Architectural Review*, CX (1951), 217–25.

17. See Purdom, C. B., *The Garden City*, London, 1913; and Culpin, E. G., *The Garden City Movement Up-to-Date*, London, 1913.

18. See Macfadyen, D., *Sir Ebenezer Howard and the Town Planning Movement*, London, 1933.

19. See Unwin, R., *Town Planning and Modern Architecture at the Hampstead Garden Suburb*, London, 1909.

p. 407 20. Some of the other large buildings were the work of Sir Herbert Baker, who was also responsible for another dominion capital at Pretoria in South Africa. Of his rival's intervention at New Delhi Lutyens remarked characteristically, 'It was my Bakerloo'.

21. See Drysdale, G., 'The Work of Leonard Stokes', *Journal of the Royal Institute of British Architects*, XXXIV (1927), 163–77, and Roberts, H. V. M., 'Leonard Aloysius Stokes', *Architectural Review*, C (1946), 173–7.

22. The New-Zealand-born Connell's High- p 408
and-Over in Bucks of 1927 is very superior, however, to Tait's Le Chateau at Silverend in Essex, and a year earlier.

CHAPTER 25

1. No sharp distinction has been made in this p 411
book between architects and engineers. Such engineers, from Telford to Candela, as have been reponsible for work of architectural pretension deserve to be considered as architects, and monographic works on several of them will be found in the Bibliography.

2. See San Francisco Museum of Art, *Domestic* p 412
Architecture of the San Francisco Bay Region, San Francisco, 1949.

3. See Banham, P. R., 'New Brutalism', *Architectural Review*, CXVIII (1955), 355–61. See also the writings of Bruno Zevi for *architettura organica*.

4. Consideration of such topics of current controversial interest belongs in periodicals or special critical works, not in a general history, however.

5. There is something symptomatic in the fact that the younger men, whether architects or critical writers, are mostly content to revive early controversial attitudes of the preceding half century rather than to offer anything really new.

6. See Holford, W., 'The Precincts of St Paul's', p. 414
Journal of the Royal Institute of British Architects, LXIII (1956), 232–4.

7. See Aarhus Universitet, *Hovedbygningen*, Aarhus [n.d.].

8. The term skyscraper in this context is to be p. 417
understood as meaning a very tall office building. Many European housing blocks, such as are discussed below, would have been considered skyscrapers a generation ago, and the same is true of much urban office building in central areas which often today rivals in height the German examples of the twenties mentioned in Chapter 20. However,

the significant skyscrapers of the post-war period are much taller than this, and – perhaps equally important – they characteristically stand in their own space, rising sheer from some sort of plaza at their base.

p. 420 9. James Cubitt (b. 1913), Stephan Buzas (b. 1915), Fello Atkinson (b. 1919), and Richard Maitland (b. 1917).

p. 423 10. Osvaldo Luis Torro (b. 1914) and Miguel Ferrer (b. 1915).

11. Architects designing for prefabrication and above all structural experimenters such as Buckminster Fuller are certainly far bolder and more revolutionary in their concepts of the house as 'controlled environment' than are those who have so far built airports. p. 424

12. Useful for the most interesting current American architects is the article 'Genetrix', *Architectural Review*, CXXXI (1957), 337–86, giving capsule biographies, with many illustrations, of no less than forty architects. p. 427

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For the study of the architecture of the western world since about 1840 no sources are more valuable than the professional periodicals. To provide a comprehensive list with full bibliographical details would require an inordinate amount of space and many technicalities because of the complicated way such publications start and stop, initiate new series, merge, and change title. However, it may be helpful to mention, without giving any descriptive details, a few that are especially valuable to the historian. In England, the *Builder*, the *Building News*, and later the *Architectural Review* are most useful; in France the *Revue générale de l'architecture*, the *Encyclopédie d'architecture*, the *Gazette des architectes*, and later *L'Architecture vivante* and *L'Architecture d'aujourd'hui*. In Austria-Hungary the *Allgemeine Bauzeitung* may be cited. For the United States, the *American Architect and Building News* and later the *Architectural Record*, the *Architectural Forum*, and *Progressive Architecture* cover the field from the eighteen-seventies to the present. The American *Journal of the Society of Architectural Historians* has devoted more articles to the nineteenth century than other learned journals. Particular articles in the above-mentioned and other periodicals are for the most part merely referenced in the Notes, except those that provide the equivalent of separate monographs on certain architects; such are listed here.

General Works are subdivided, necessarily with some overlap, into those covering the *Nineteenth Century* (including, in fact, the later decades of the eighteenth also) and those covering the *Twentieth Century*. There follow rubrics for separate countries or groups of countries. Finally come the monographs on individual architects arranged, regardless of country or period, alphabetically by architect.

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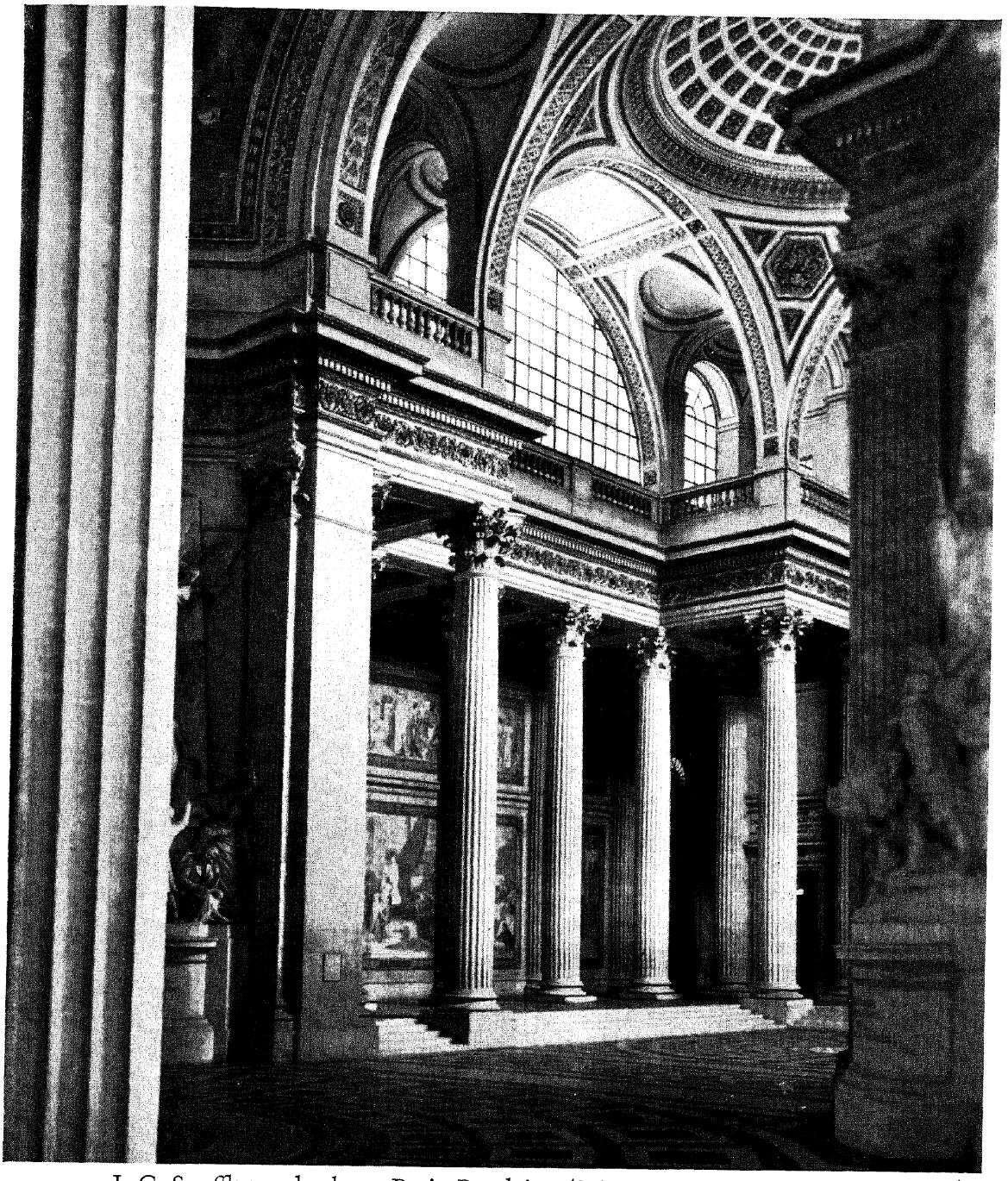
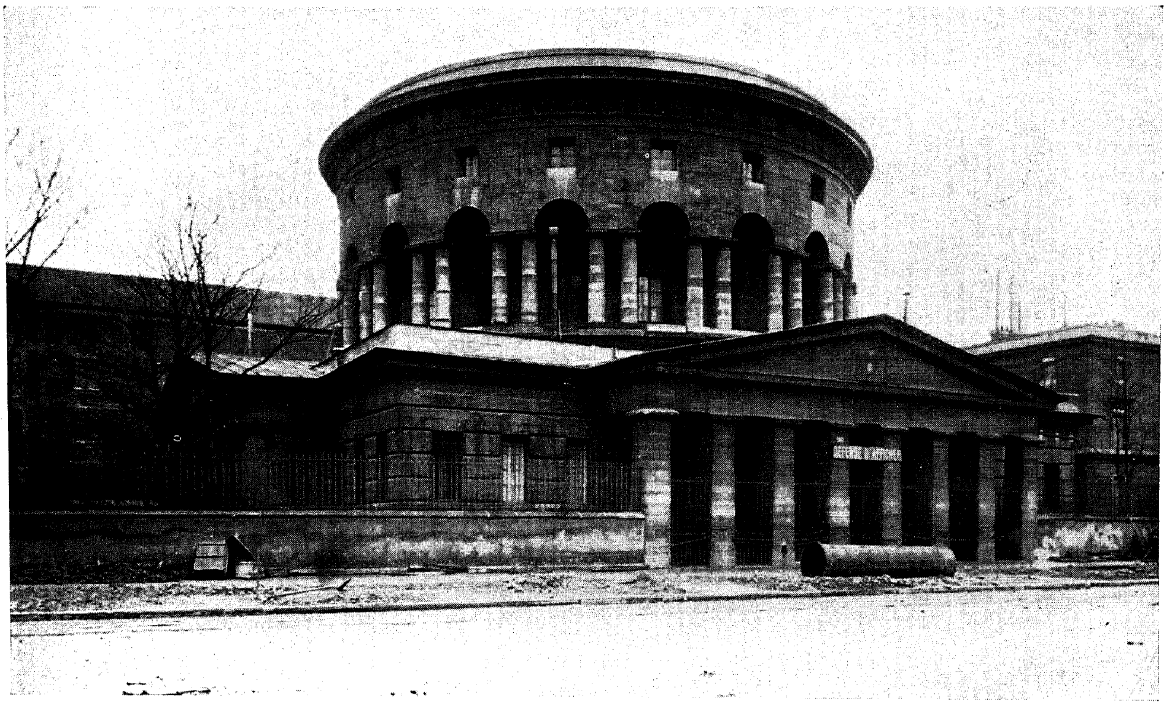
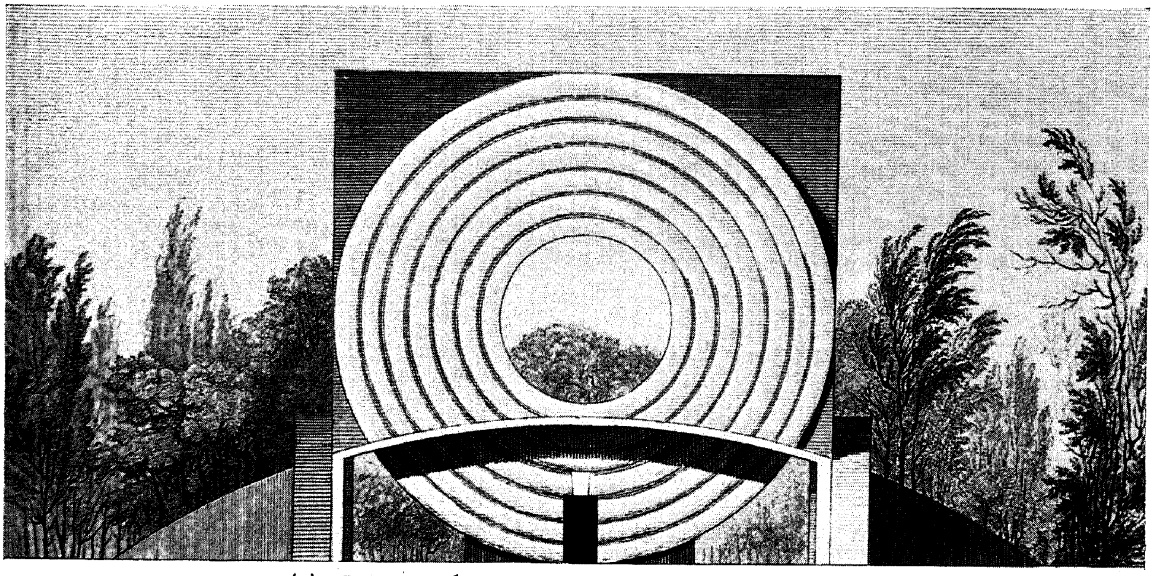
THE PLATES



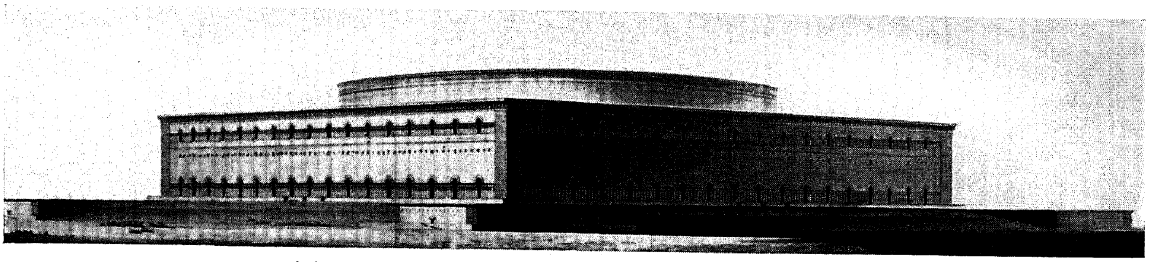
J.-G. Soufflot and others: Paris, Panthéon (Sainte-Geneviève), 1757–90



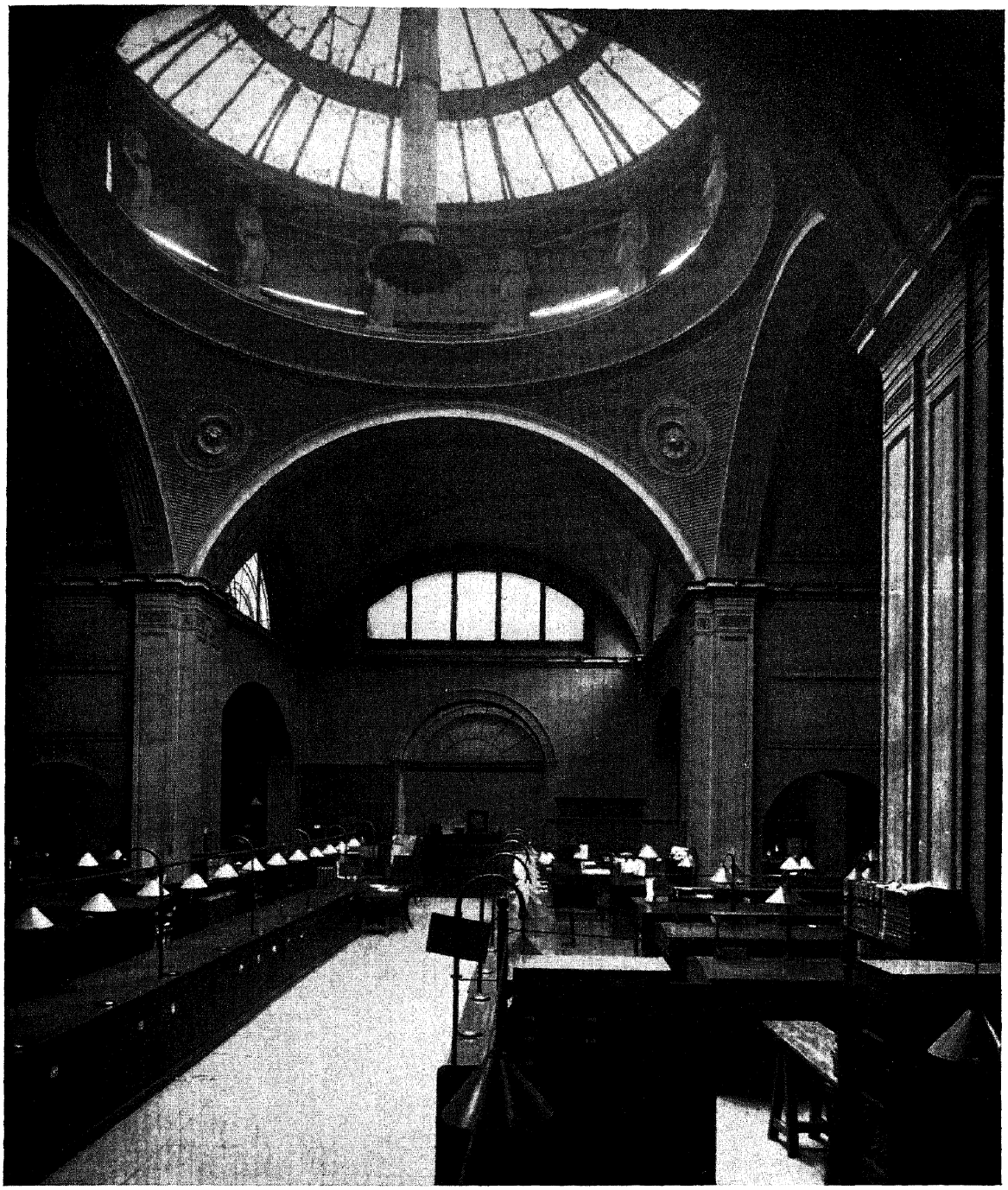
(A) C.-N. Ledoux: Paris, Barrière de la Villette, 1784–9



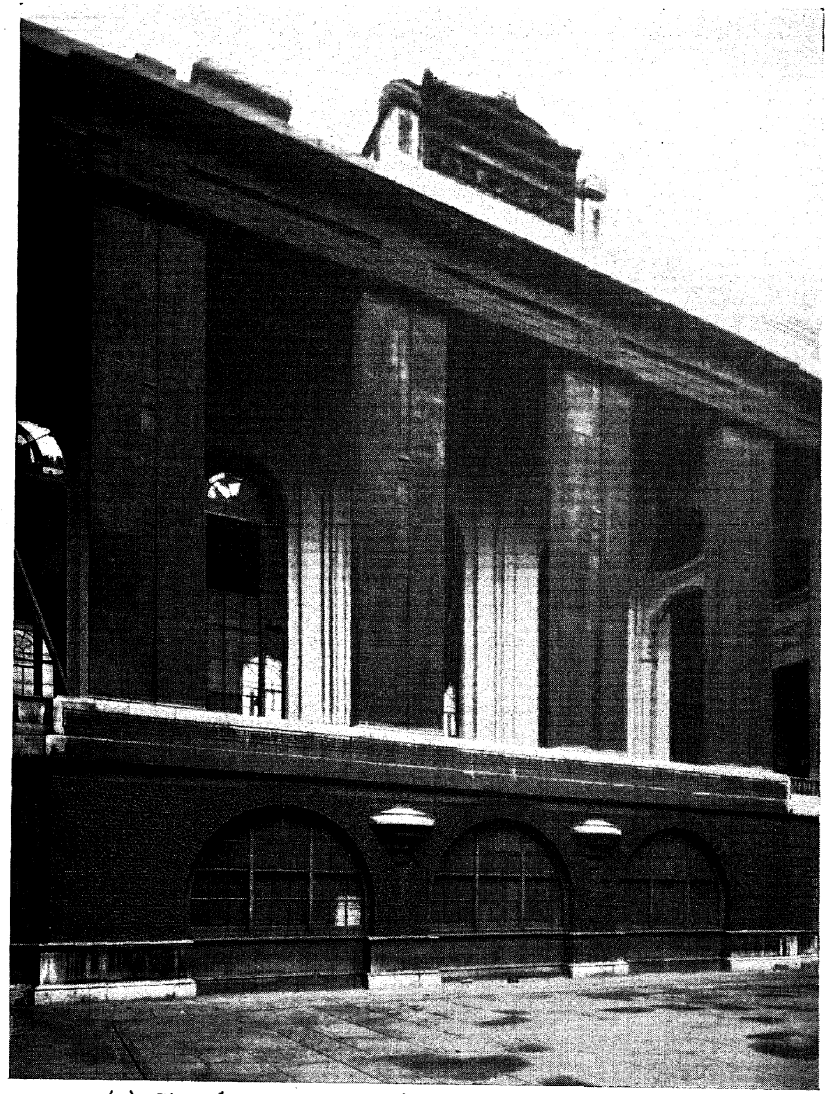
(B) C.-N. Ledoux: Project for Coopery, *c.* 1785



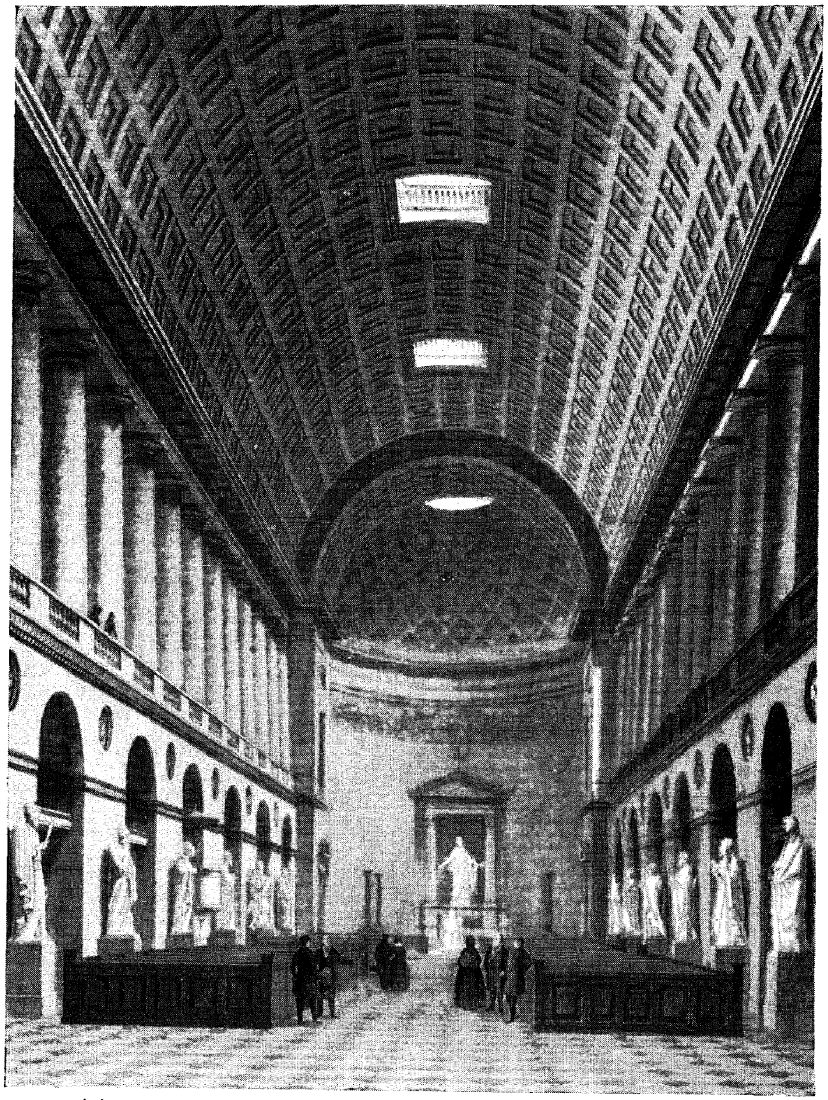
(C) L.-E. Boullée: Project for City Hall, *c.* 1785



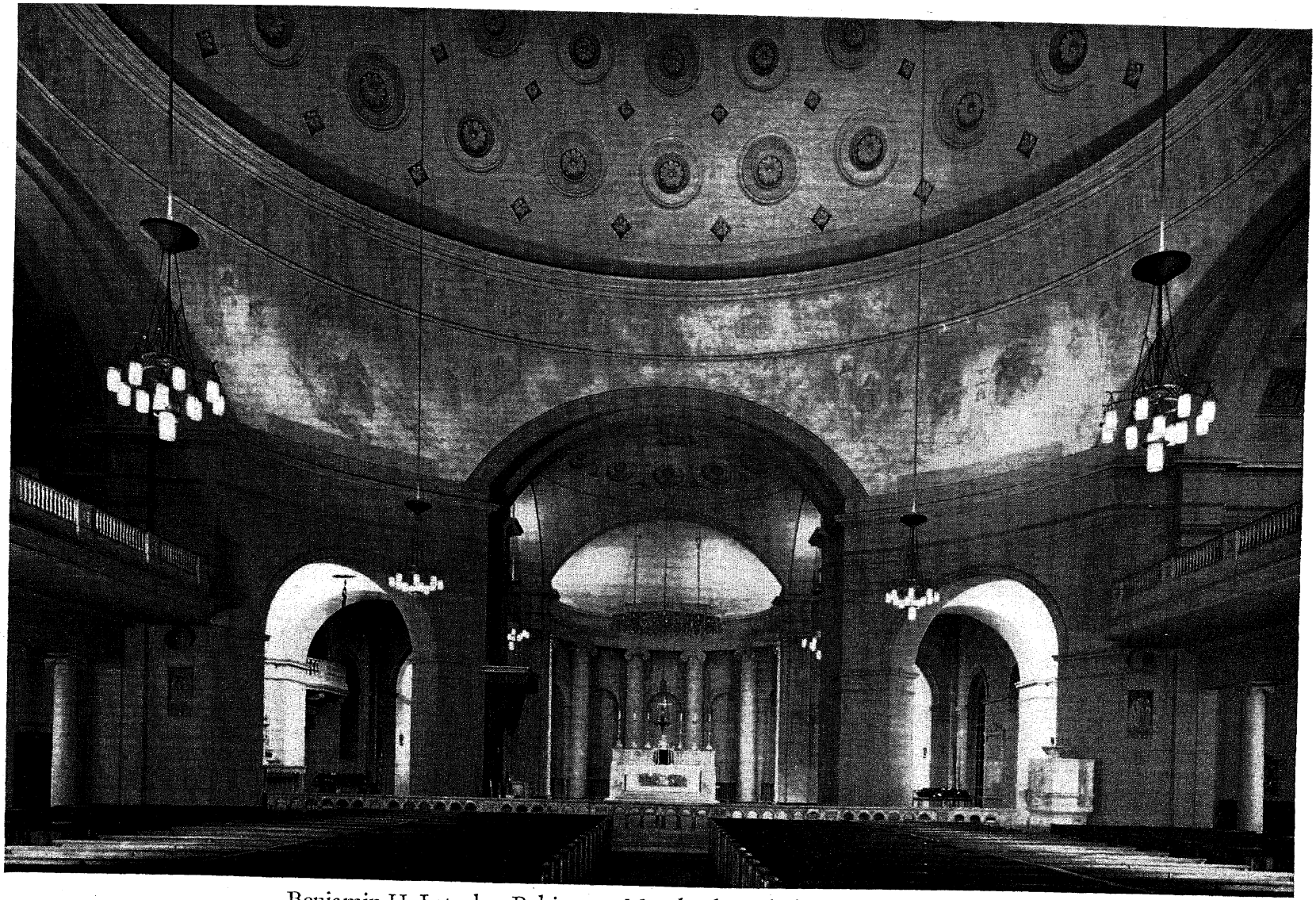
Sir John Soane: London, Bank of England, Consols Office, 1794



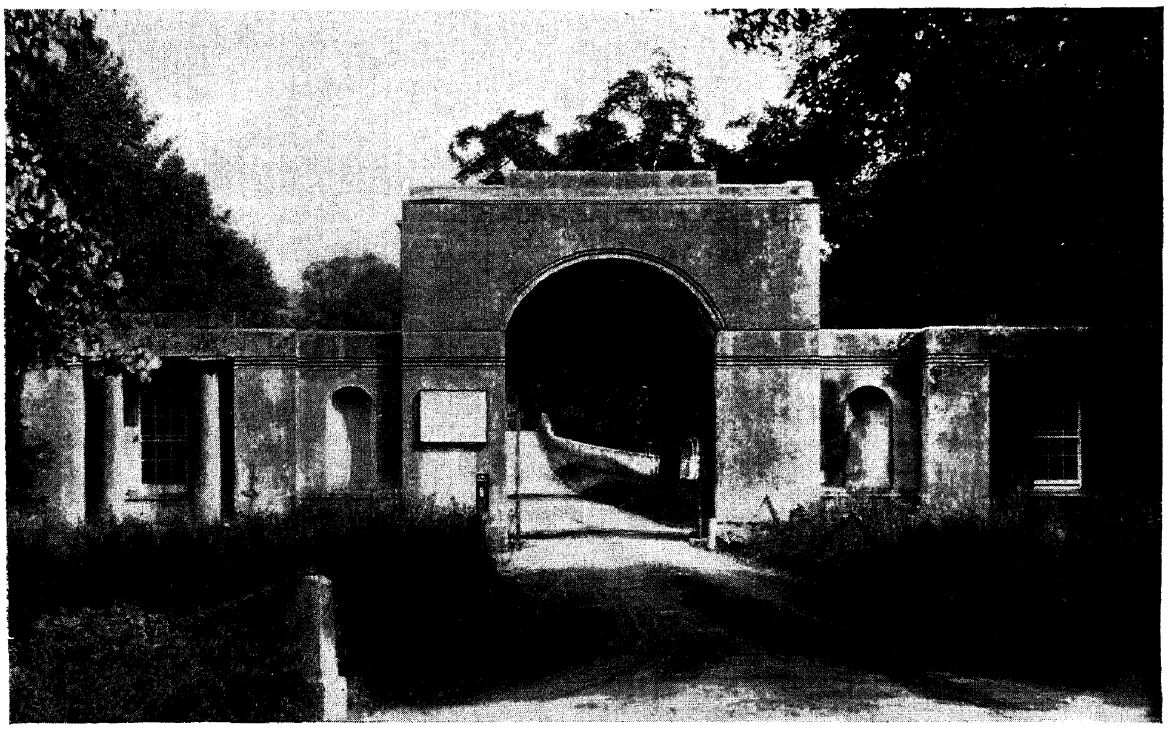
(A) Sir John Soane: London, Bank of England, Governor's Court, 1803



(B) C. F. Hansen: Copenhagen, Vor Frue Kirke, 1811–29



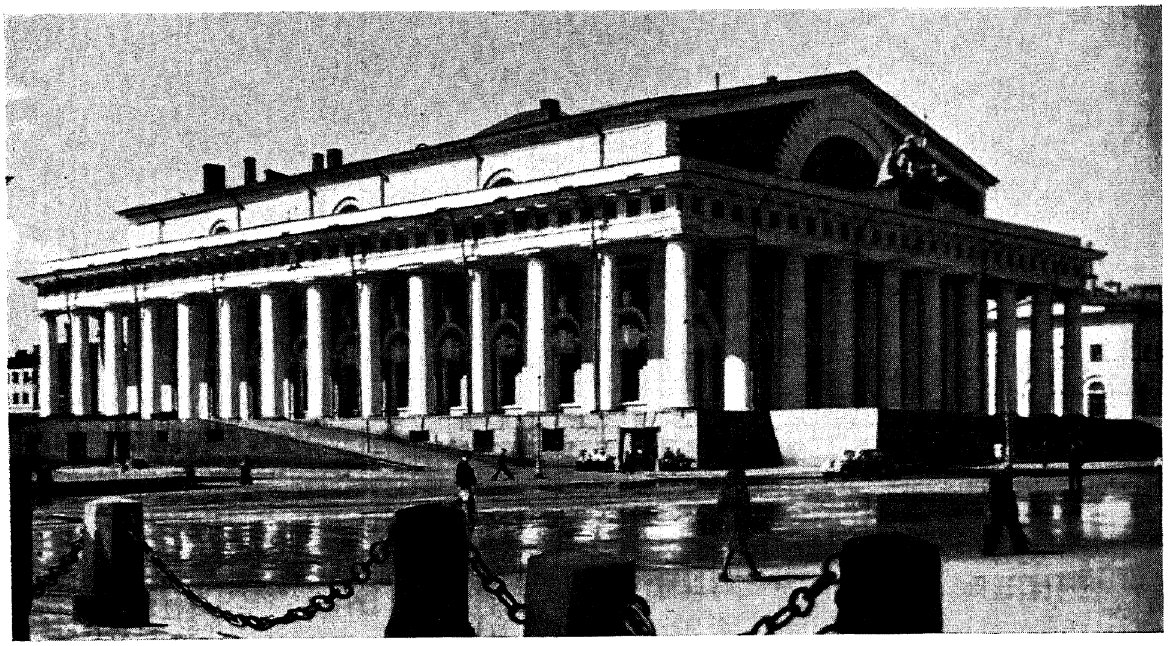
Benjamin H. Latrobe: Baltimore, Maryland, Catholic Cathedral, 1805–18



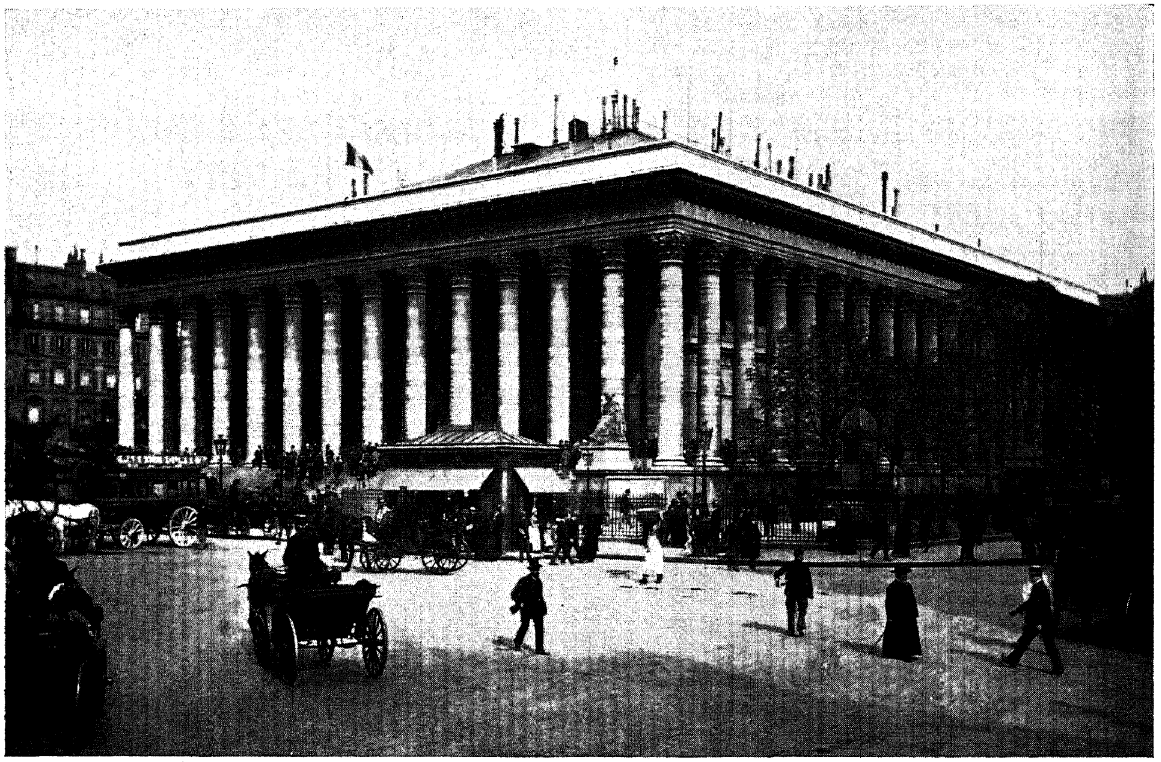
(A) Sir John Soane: Tyringham, Buckinghamshire, Entrance Gate, 1793–6

(B) Percier & Fontaine: Paris, Rue de Rivoli, 1802–55

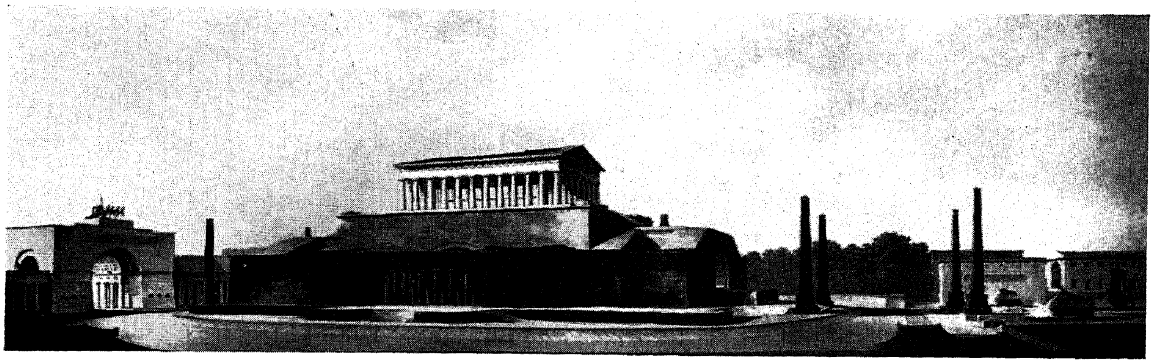
J.-F.-T. Chalgrin and others: Paris, Arc de Triomphe de l'Étoile, 1806–35



(A) Thomas de Thomon: Petersburg, Bourse, 1804–16



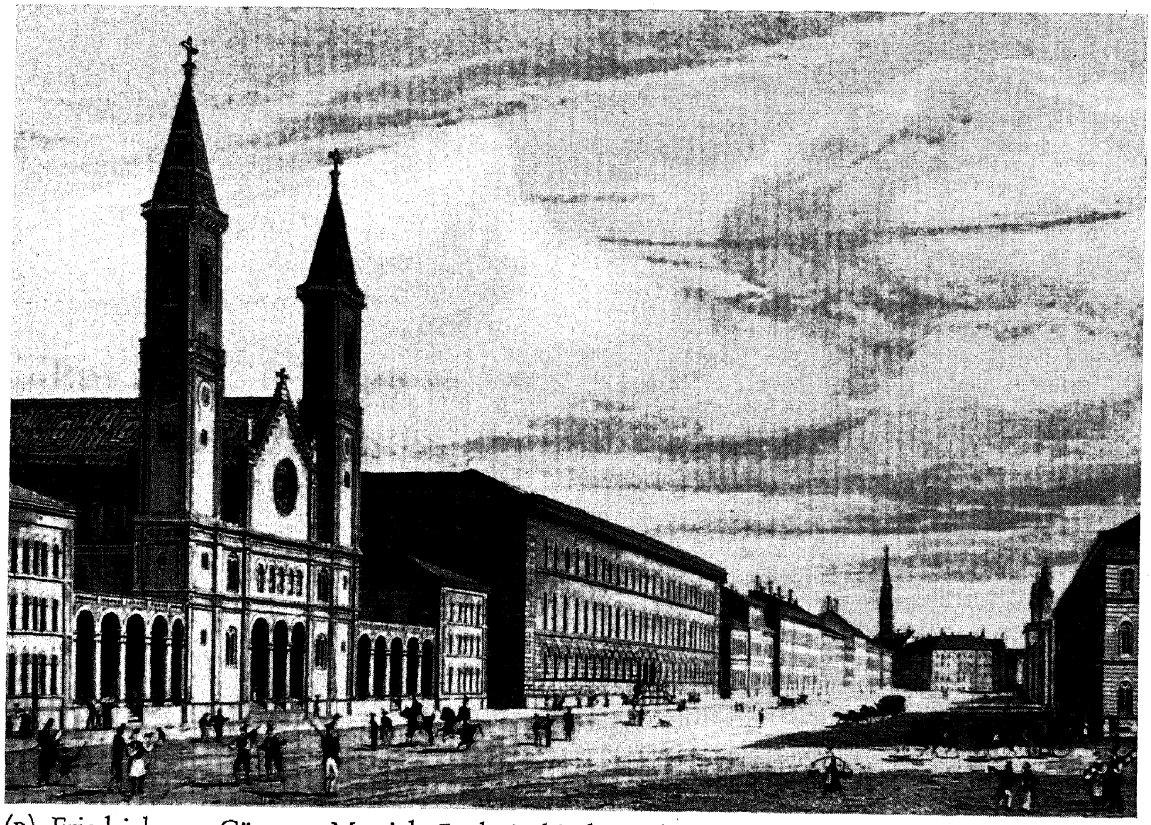
(B) A.-T. Brongniart and others: Paris, Bourse, 1808–15



(A) Friedrich Gilly: Project for monument to Frederick the Great, 1797

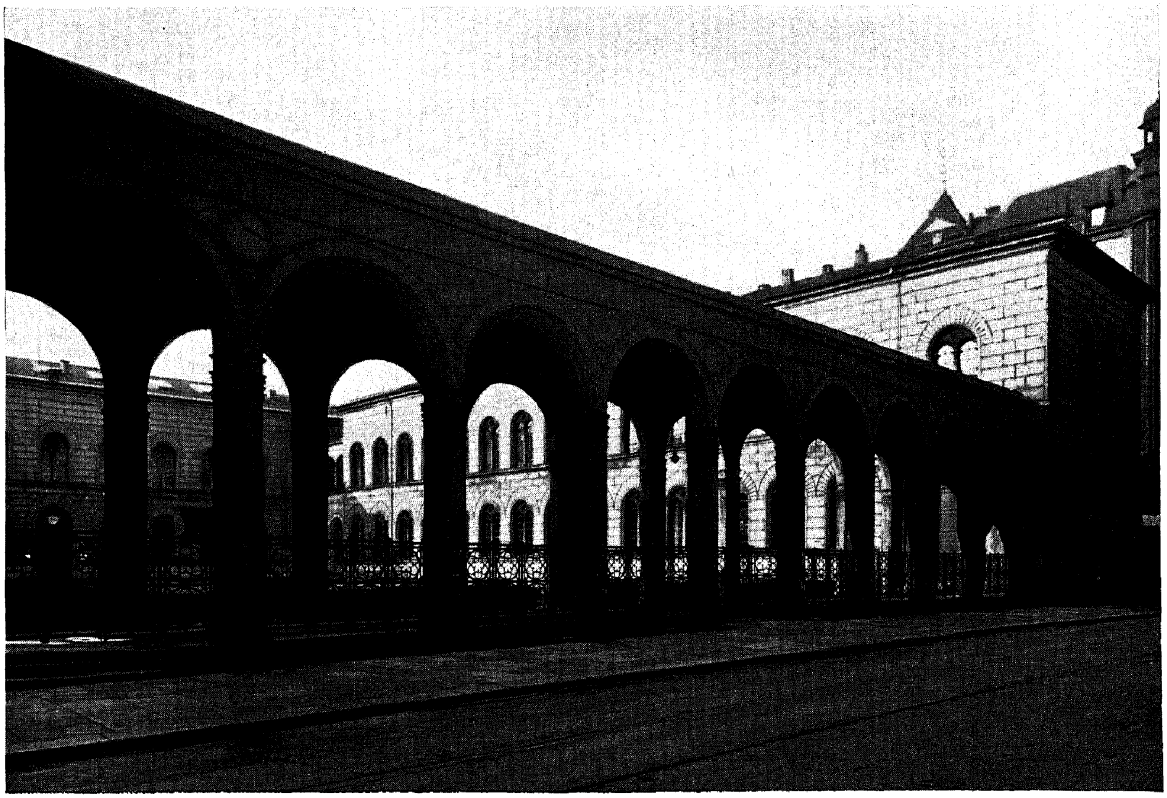
(B) Leo von Klenze: Munich, Glyptothek, 1816–30

(A) Friedrich Weinbrenner: Karlsruhe, Marktplatz, 1804–24

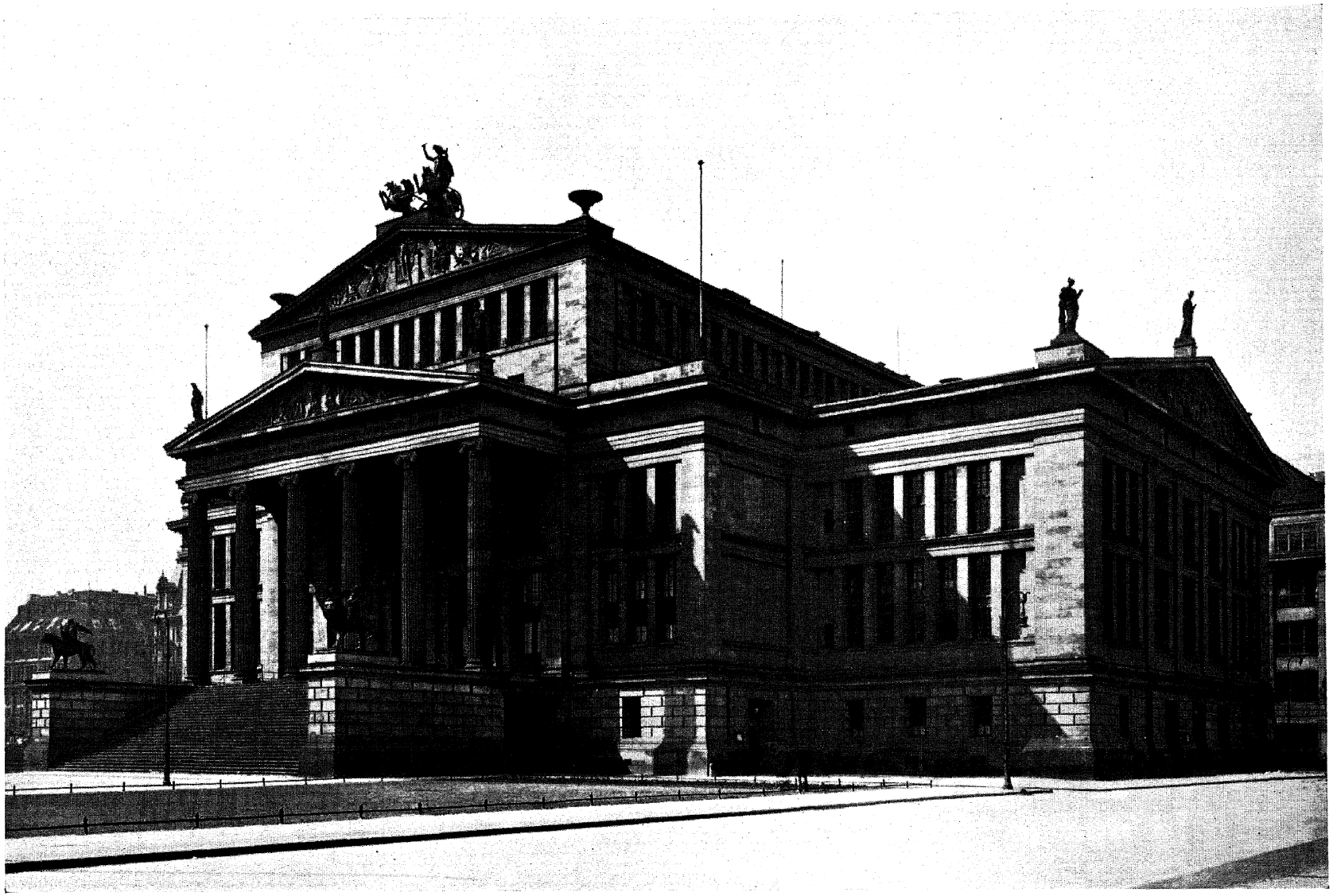


(B) Friedrich von Gärtner: Munich, Ludwigskirche and Staatsbibliothek, 1829–40 and 1831–40

(A) Heinrich Hübsch: Baden-Baden, Trinkhalle, 1840

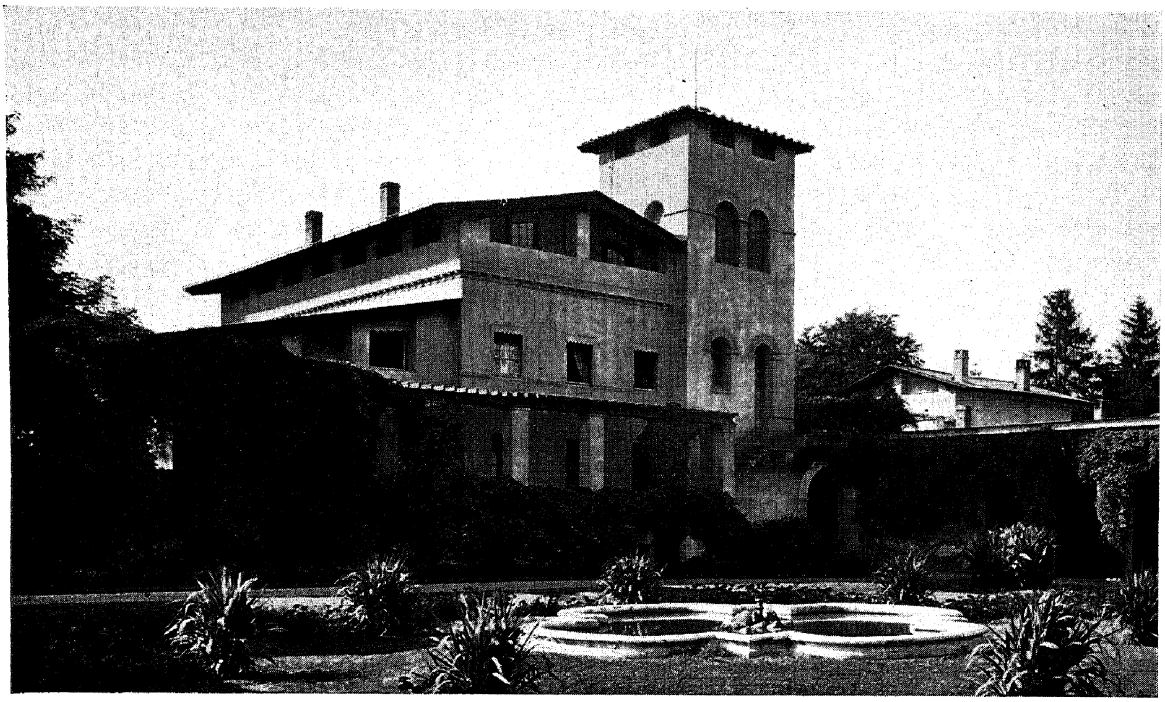


(B) Wimmel & Forsmann: Hamburg, Johanneum, 1836–9



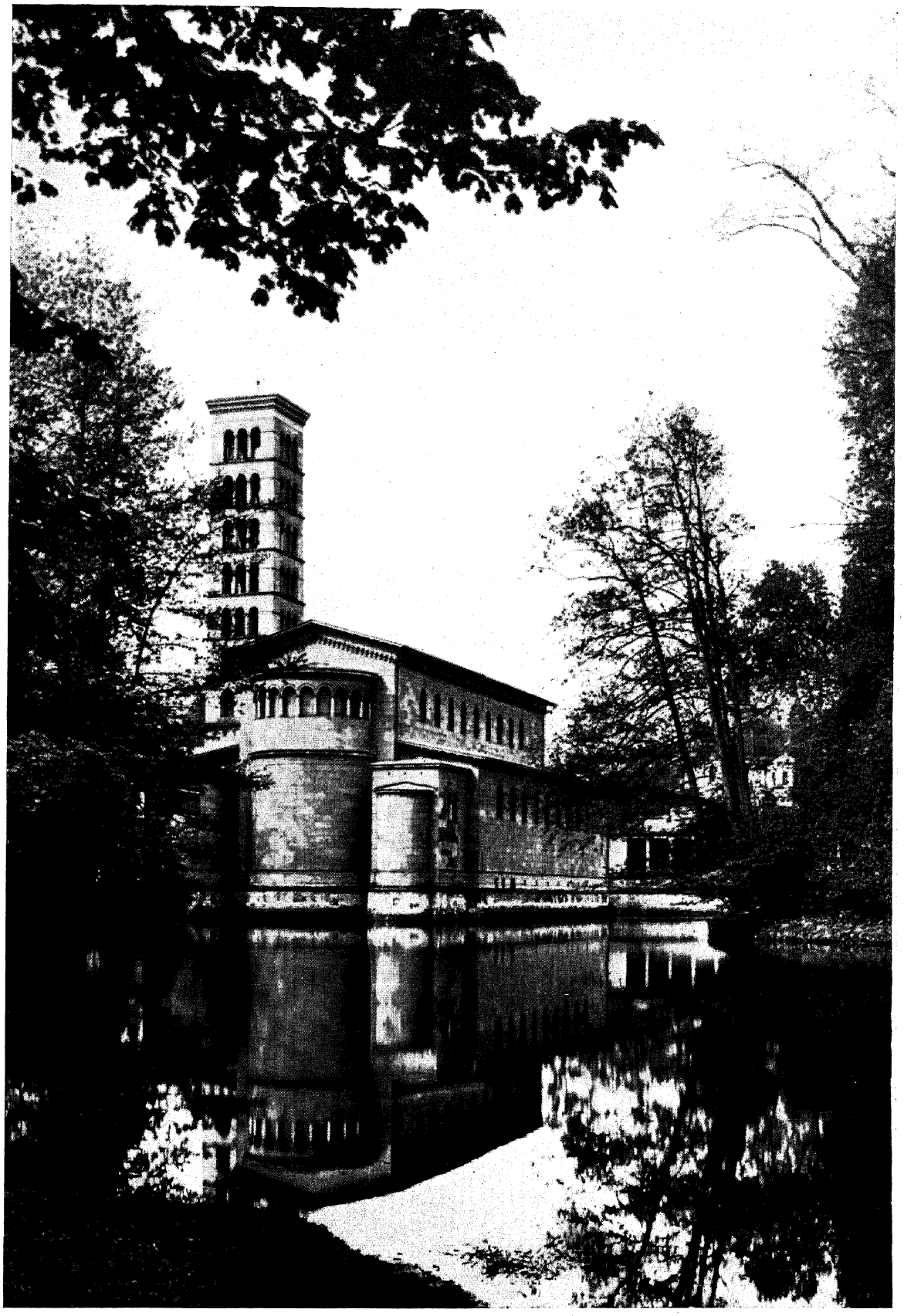
K. F. von Schinkel: Berlin, Schauspielhaus, 1819–21

K. F. von Schinkel: Berlin, Altes Museum, 1824–8

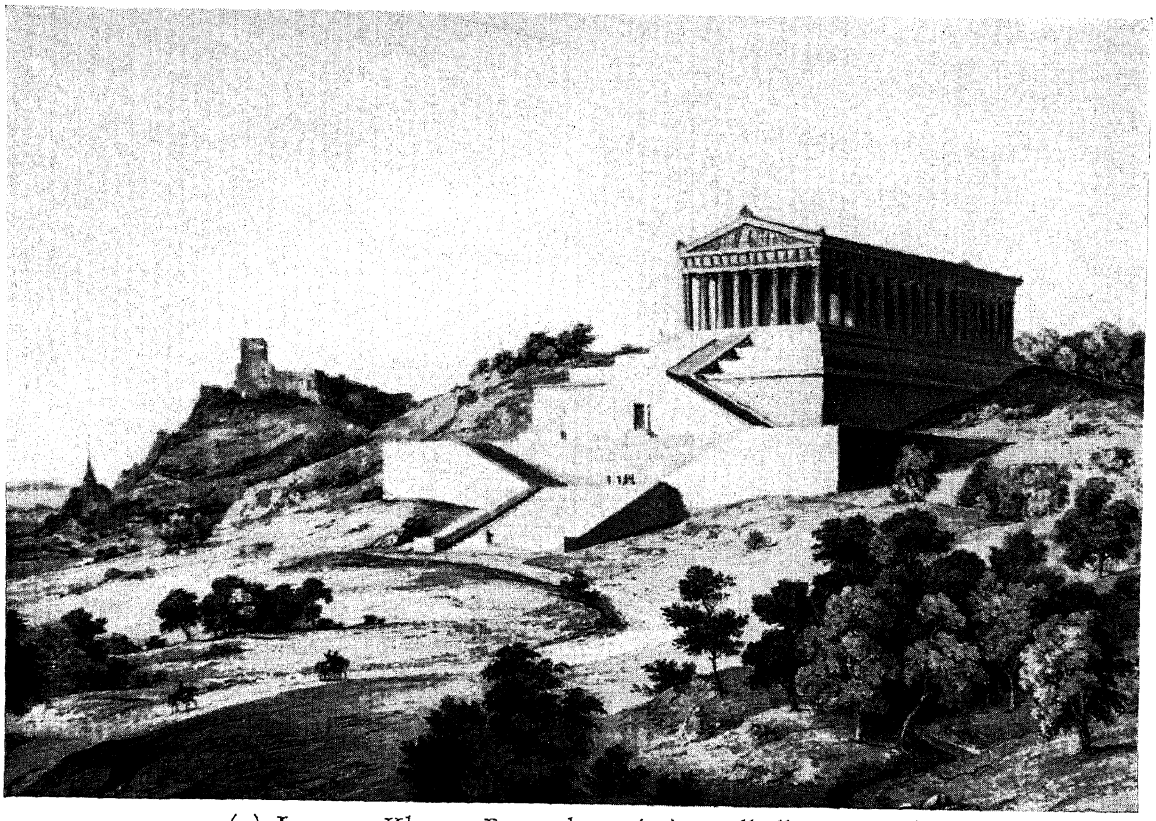


(A) K. F. von Schinkel: Potsdam, Court Gardener's House, 1829–31

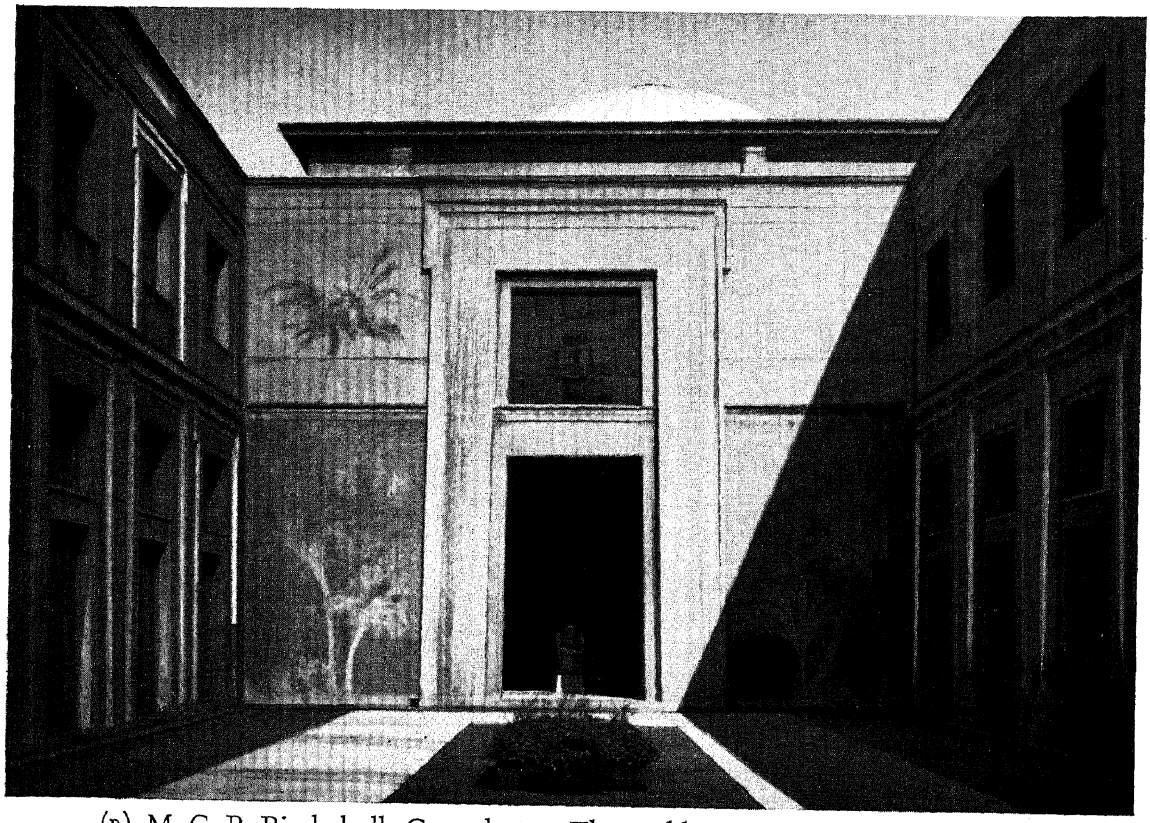
(B) G. L. F. Laves: Hanover, Opera House, 1845–52



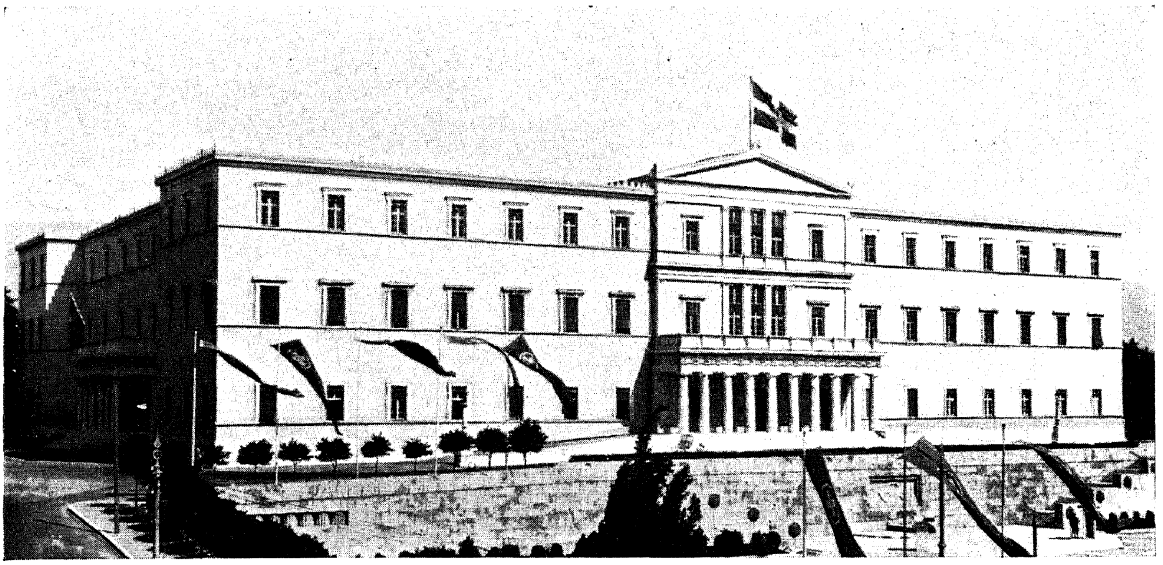
Ludwig Persius: Potsdam, Friedenskirche, 1845–8



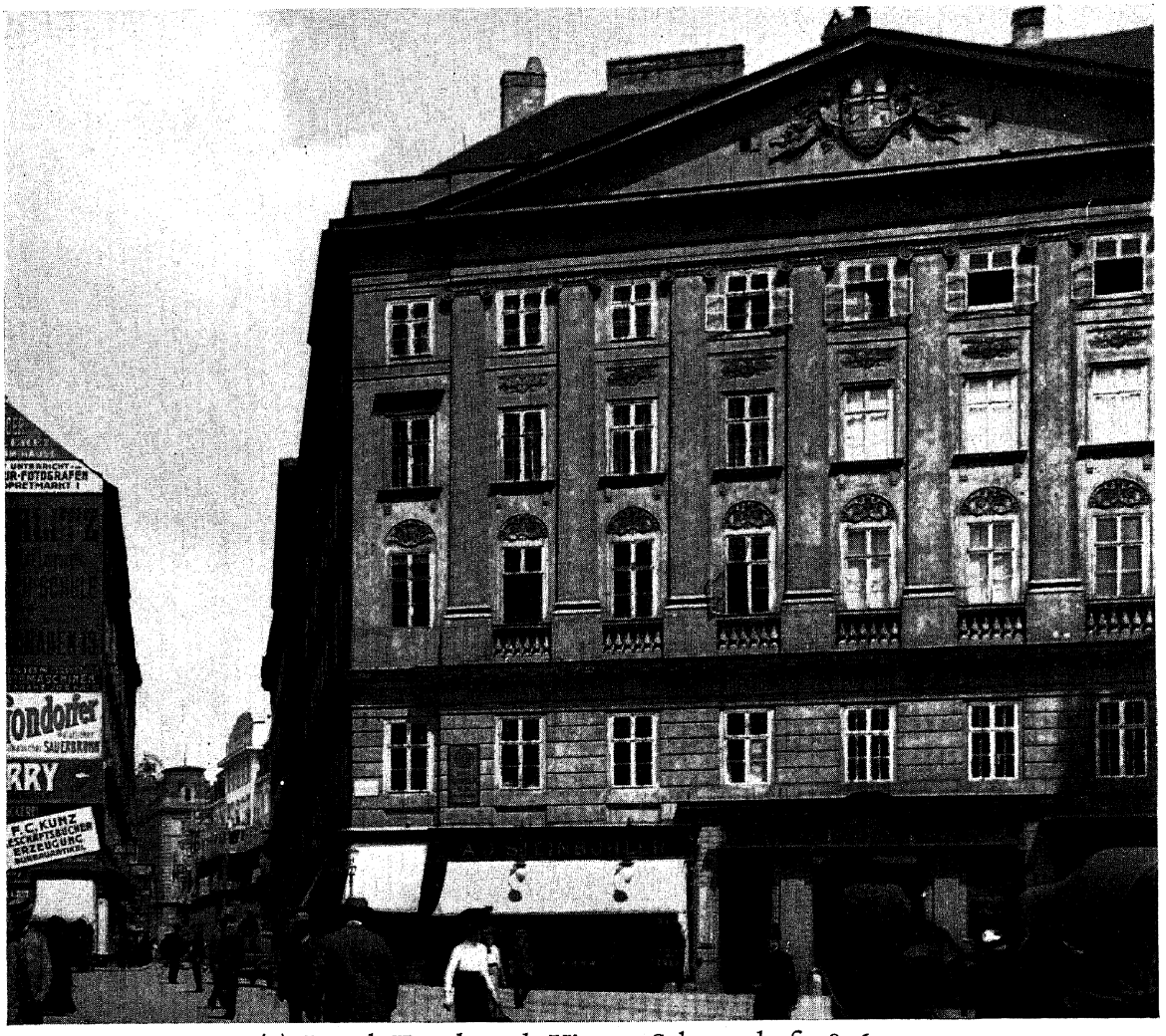
(A) Leo von Klenze: Regensburg (nr), Walhalla, 1831–42



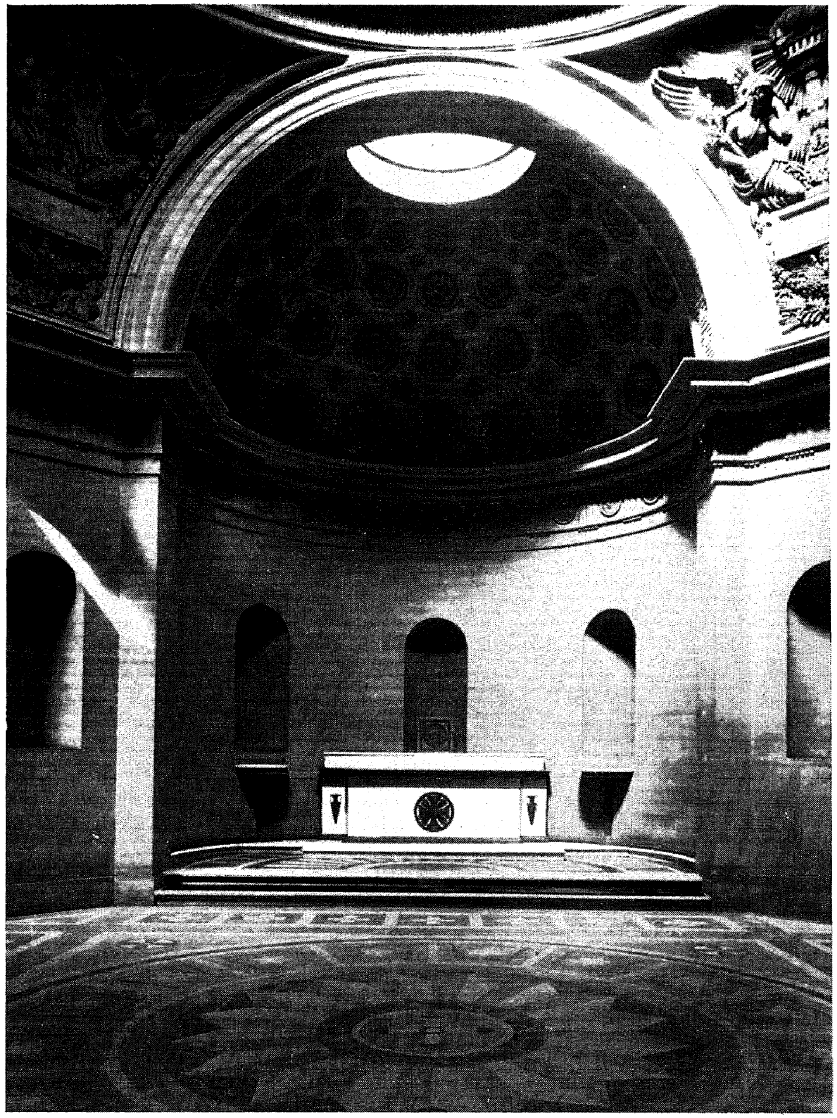
(B) M. G. B. Bindesbøll: Copenhagen, Thorwaldsen Museum, Court, 1839–48



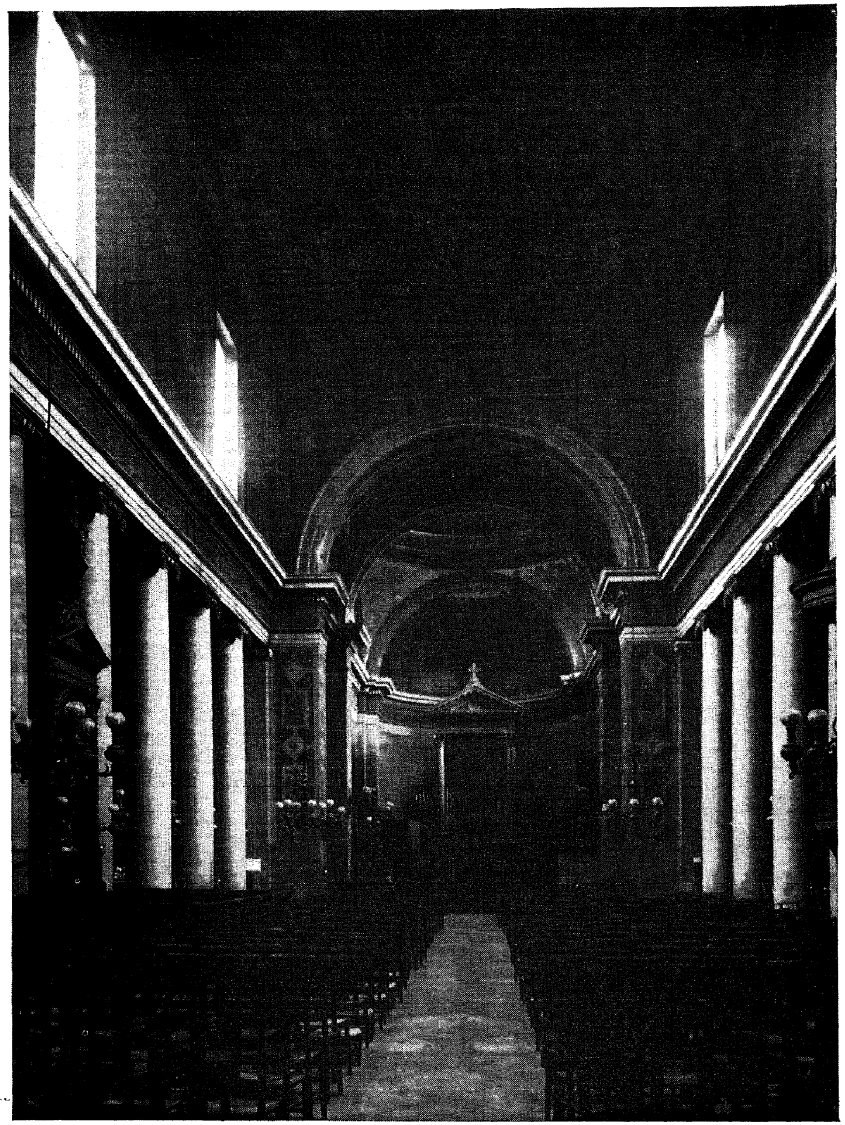
(A) Friedrich von Gärtner: Athens, Old Palace, 1837–41



(B) Joseph Kornhäusel: Vienna, Schottenhof, 1826–32

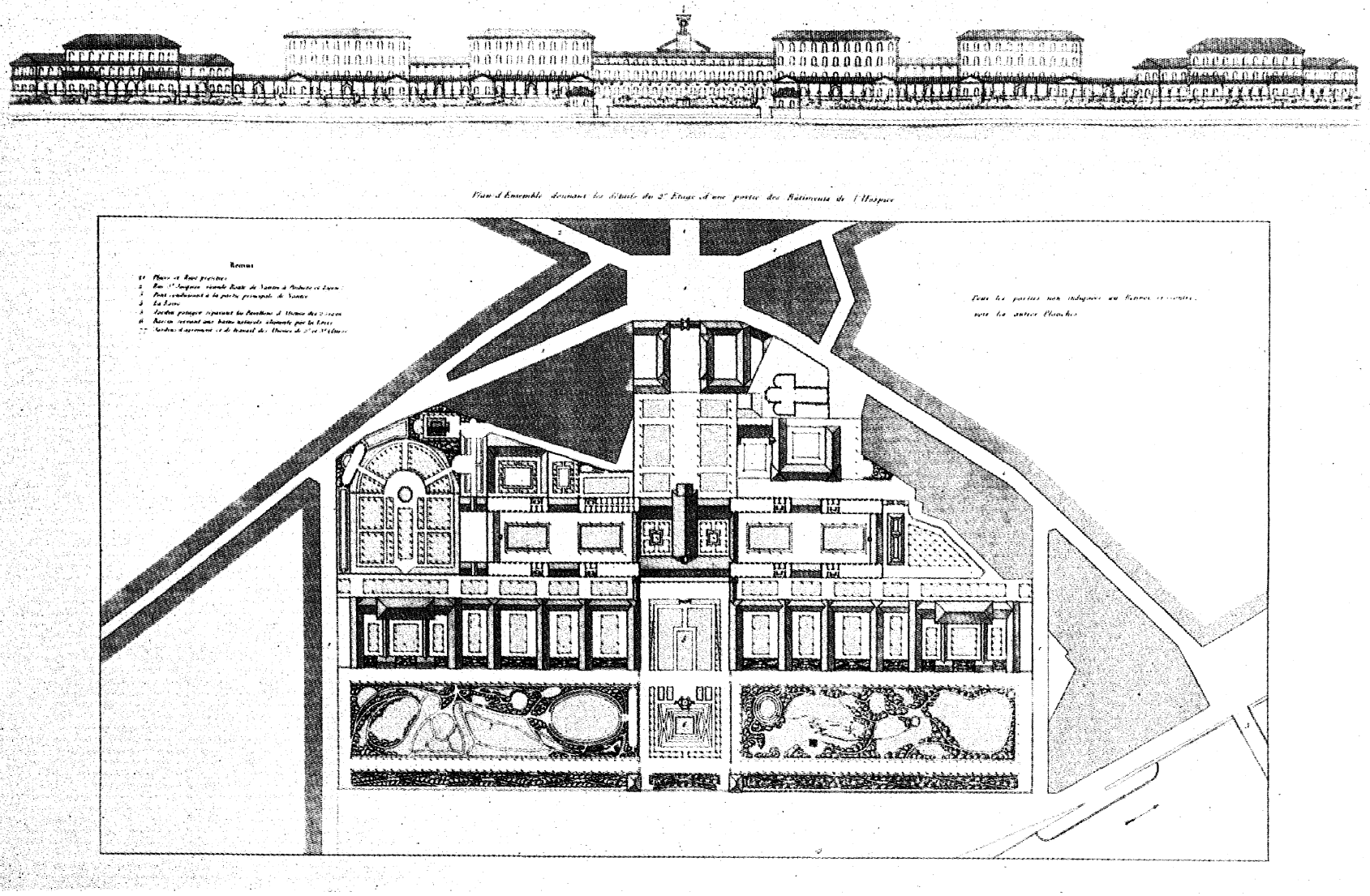


(A) P.-F.-L. Fontaine: Paris, Chapelle Expiatoire, 1816–24

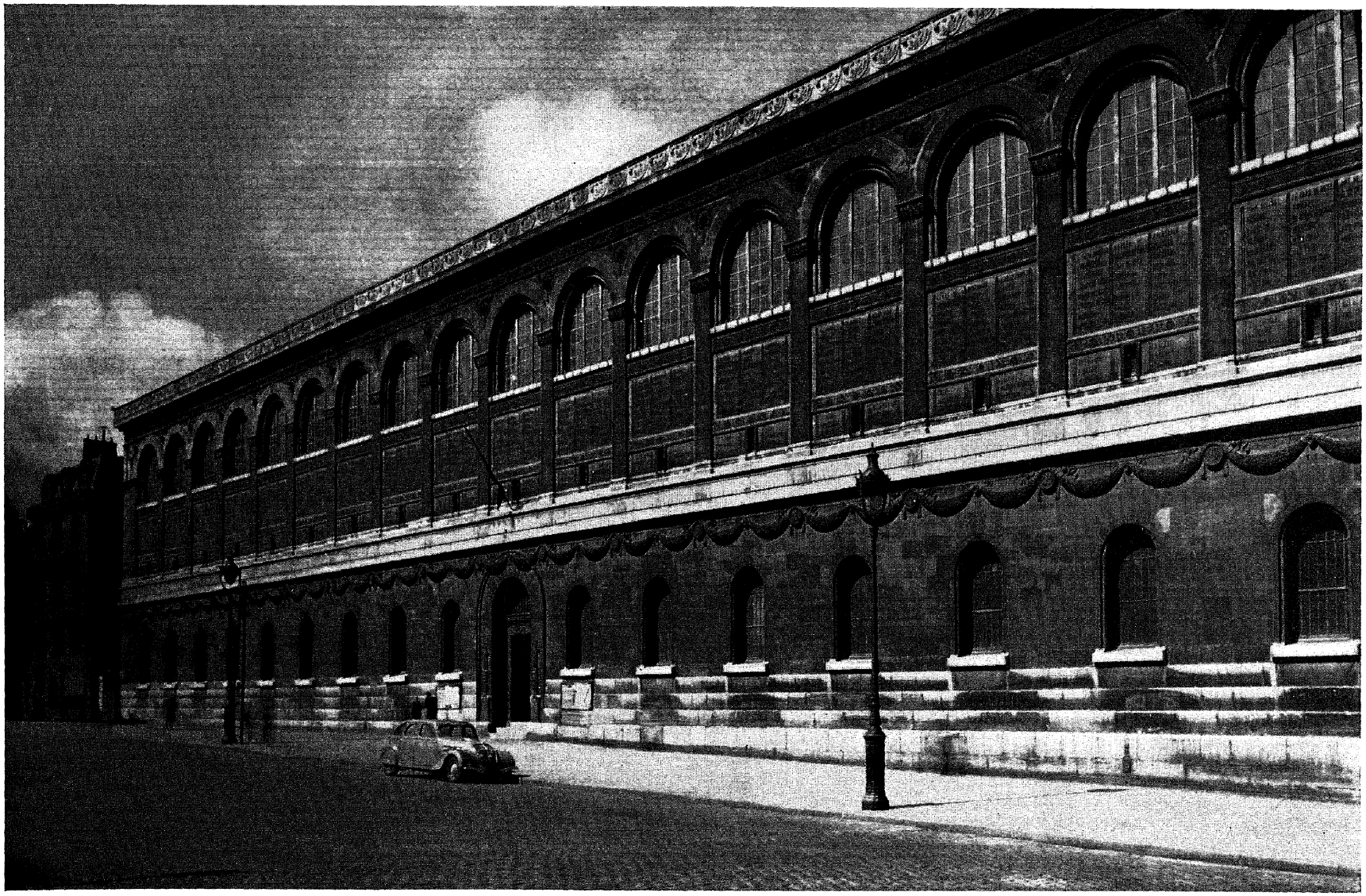


(B) L.-H. Lebas: Paris, Notre-Dame-de-Lorette, 1823–36

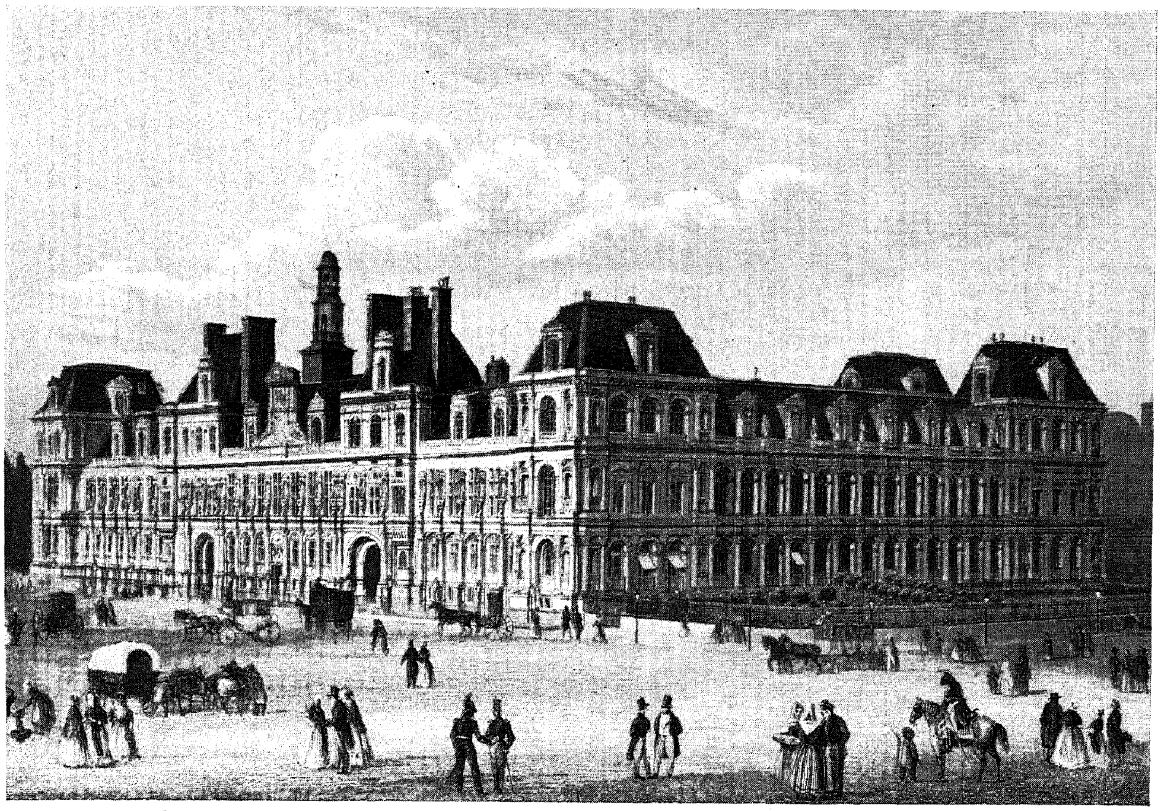
J.-B. Lepère and J.-I. Hittorff: Paris, Saint-Vincent-de-Paul, 1824–44



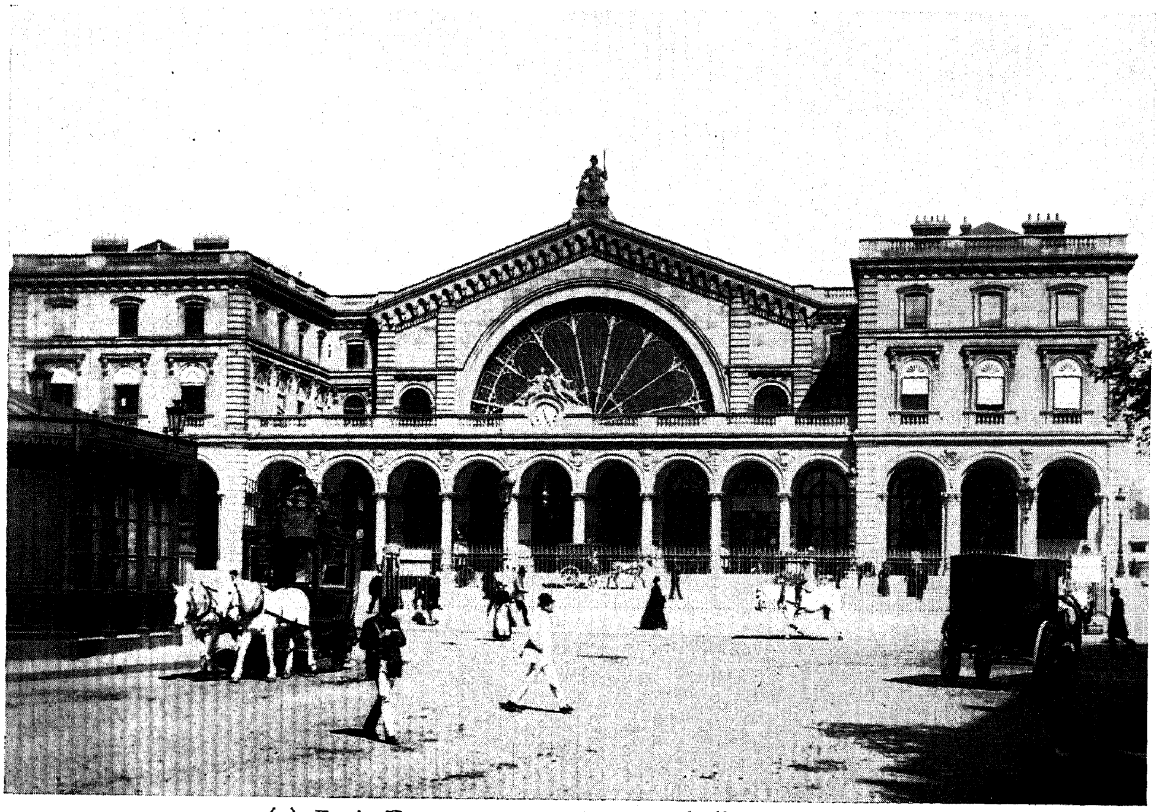
Douillard Frères: Nantes, Hospice Général, 1832–6



H.-P.-F. Labrouste: Paris, Bibliothèque Sainte-Geneviève, 1843–50



(A) É.-H. Godde and J.-B. Lesueur: Paris, extension of Hôtel de Ville, 1837–49



(B) F.-A. Duquesney: Paris, Gare de l'Est, 1847–52

(A) Giuseppe Jappelli and Antonio Gradenigo: Padua, Caffè Pedrocchi, 1816–31

(B) Antonio Niccolini: Naples, San Carlo Opera House, 1810–12

Raffaelle Stern: Rome, Vatican Museum, Braccio Nuovo, 1817–21

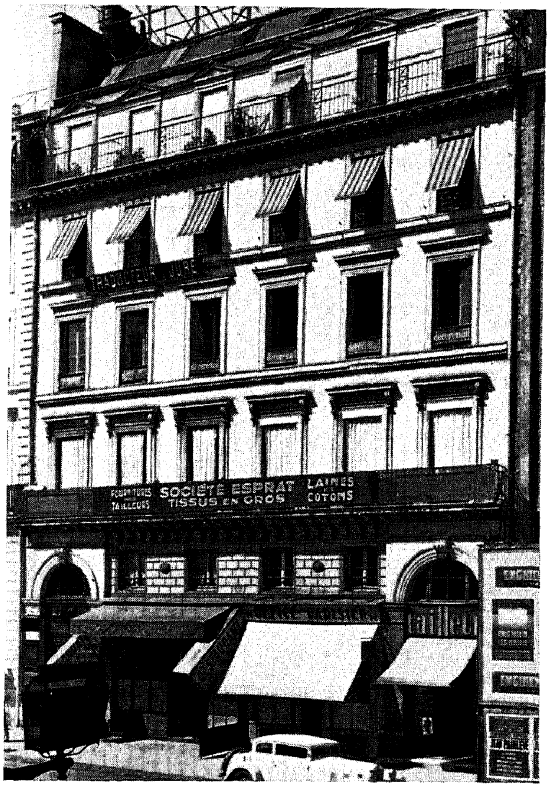
A. de Simone: Caserta, Royal Palace, Sala di Marte, 1807

(A) Pietro Bianchi: Naples, San Francesco di Paola, 1816–24

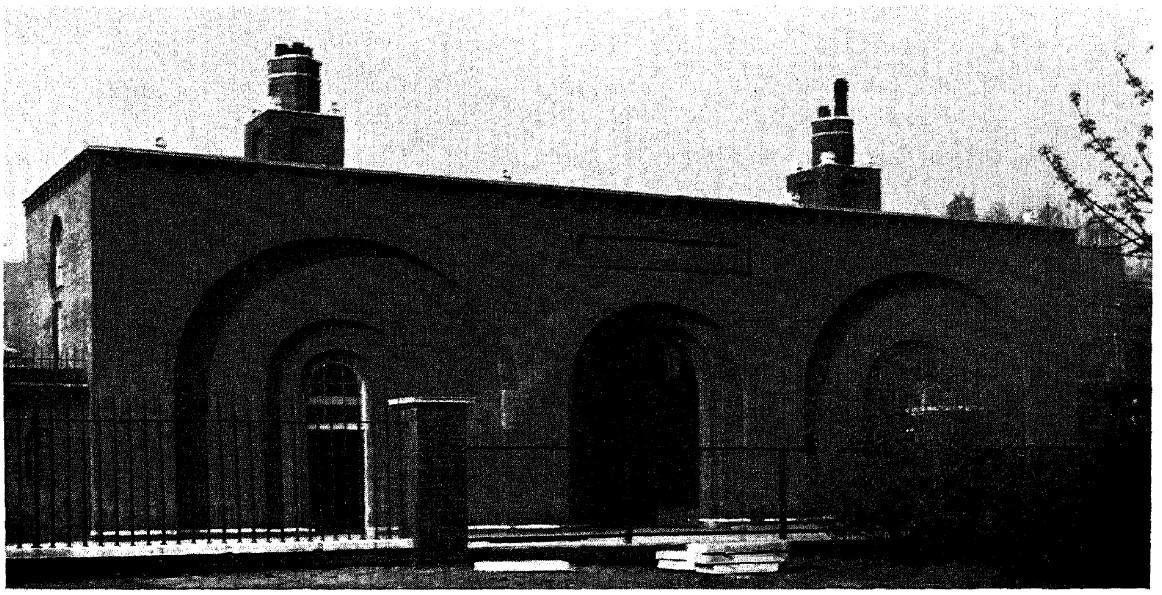
(B) Giuseppe Frizzi and Carlo Promis: Turin, Piazza Vittorio Veneto, laid out in 1818, with Gran Madre di Dio by Ferdinando Bonsignore, 1818–31

(A) A. A. Monferran: Petersburg, St Isaac's Cathedral, 1817–57

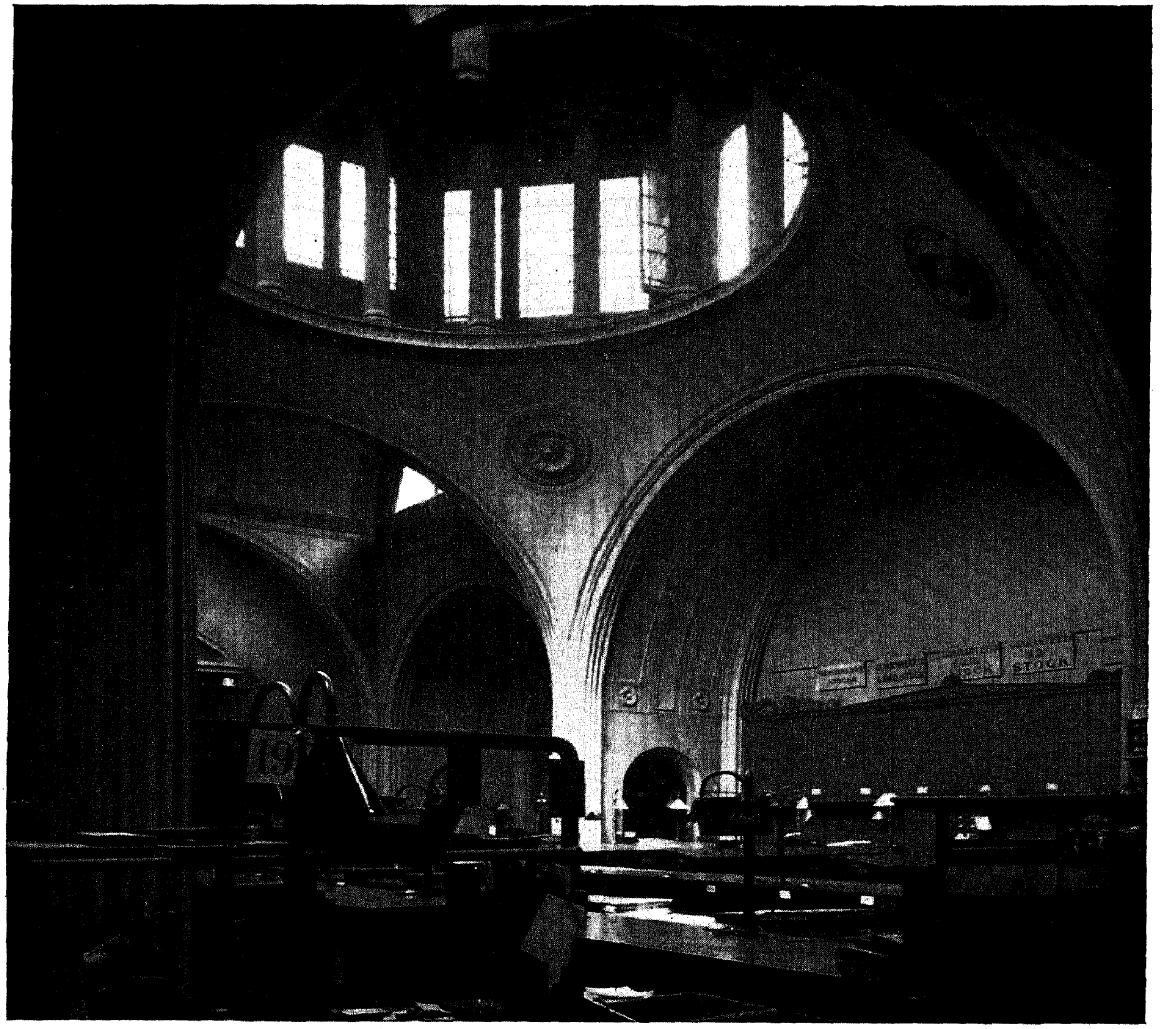
(B) A. A. Monferran: Petersburg, Alexander Column, 1829; and K. I. Rossi: Petersburg, General Staff Arches, 1819–29



(C) A.-J. Pellechet: Paris, block of flats, 10 Place de la Bourse, 1834



(A) Sir John Soane: London, Royal Hospital, Chelsea, Stables, 1814–17



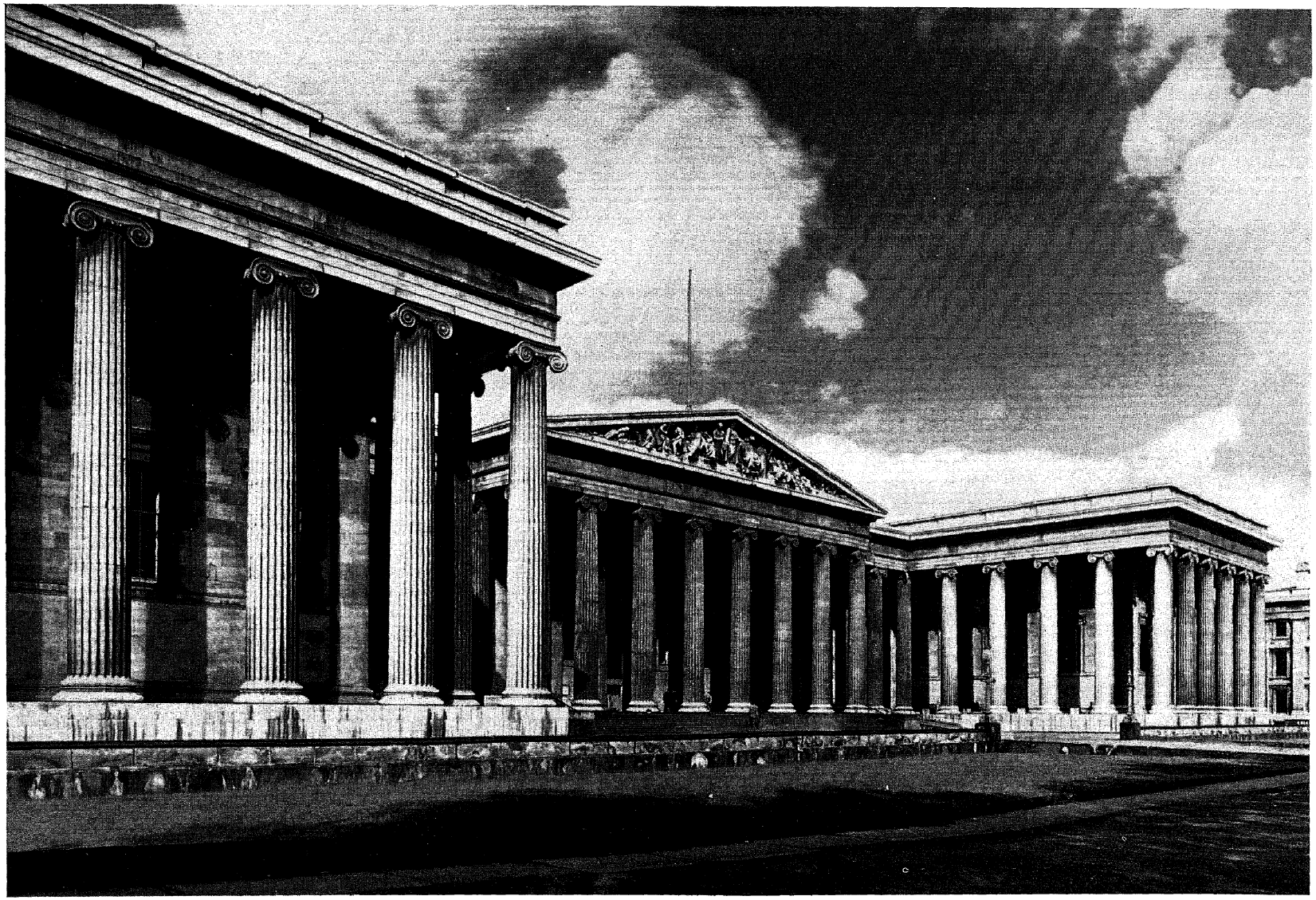
(B) Sir John Soane: London, Bank of England, Colonial Office, 1818–23

Alexander Thomson: Glasgow, Caledonia Road Free Church, 1856–7

John Nash: London, Piccadilly Circus and Lower Regent Street, 1817–19

London, Hyde Park Corner: Decimus Burton, Screen, 1825; Arch, 1825; William Wilkins, St George's Hospital, 1827–8; Benjamin Dean Wyatt, Apsley House, 1828

John Nash and James Thomson: London, Regent's Park, Cumberland Terrace, 1826–7



Sir Robert Smirke: London, British Museum, south front, completed 1847

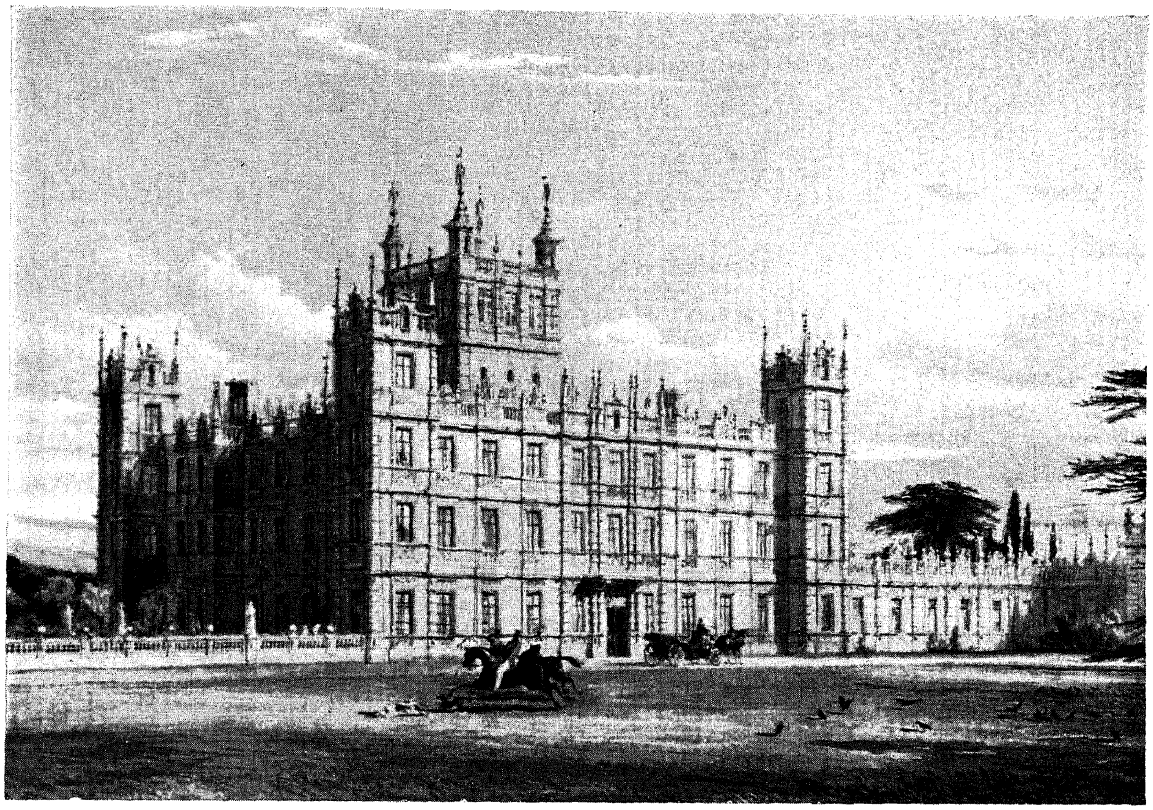
(A) H. L. Elmes: Liverpool, St George's Hall, 1841–54

(B) W. H. Playfair: Edinburgh, Royal Scottish Institution (*right*), National Gallery of Scotland, and Free Church College, 1822–36, 1850–4, and 1846–50

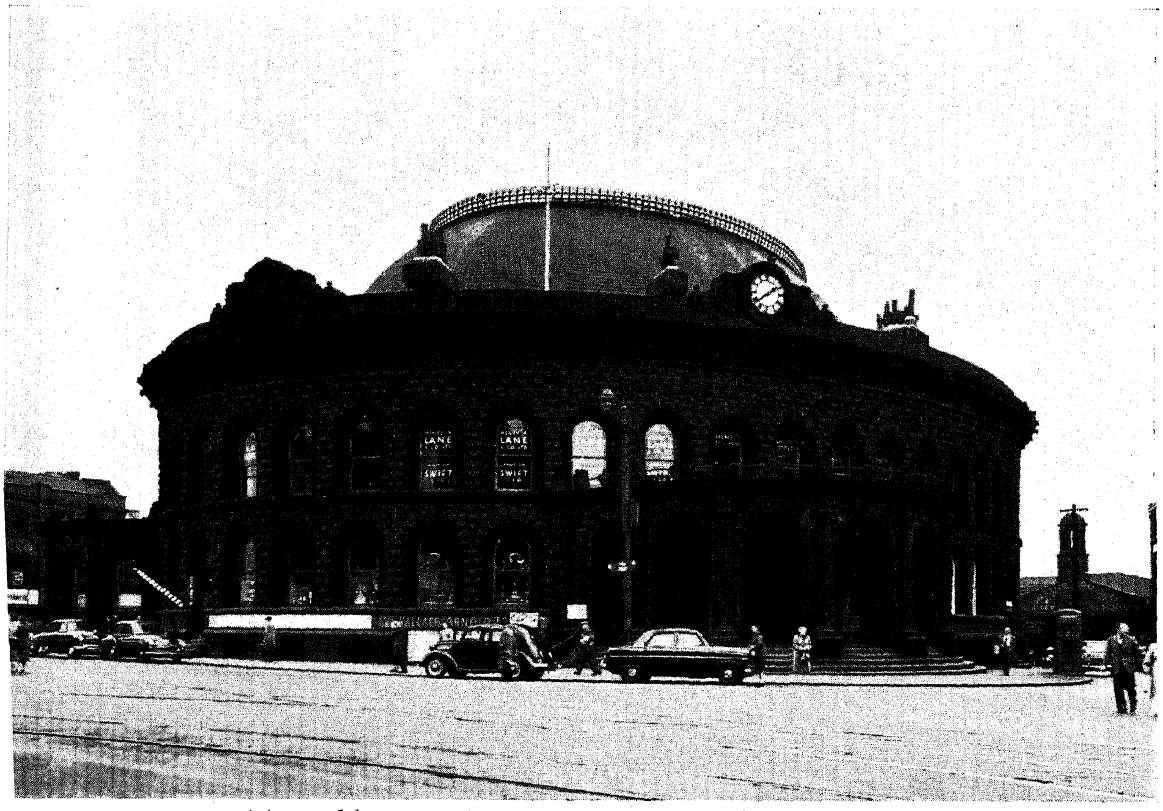
(A) Alexander Thomson: Glasgow, Moray Place, Strathbungo, 1859

(B) Sir Charles Barry: London, Travellers' Club and Reform Club, 1830–2 and 1838–40

J. W. Wild: London, Christ Church, Streatham, 1840–2

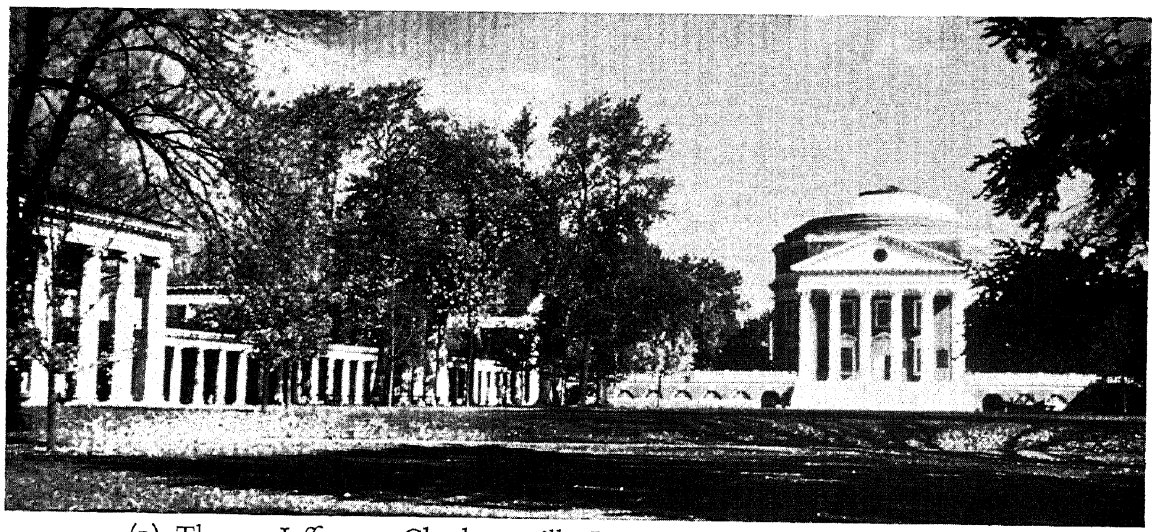


(A) Sir Charles Barry: original design for Highclere Castle, Hampshire, *c.* 1840

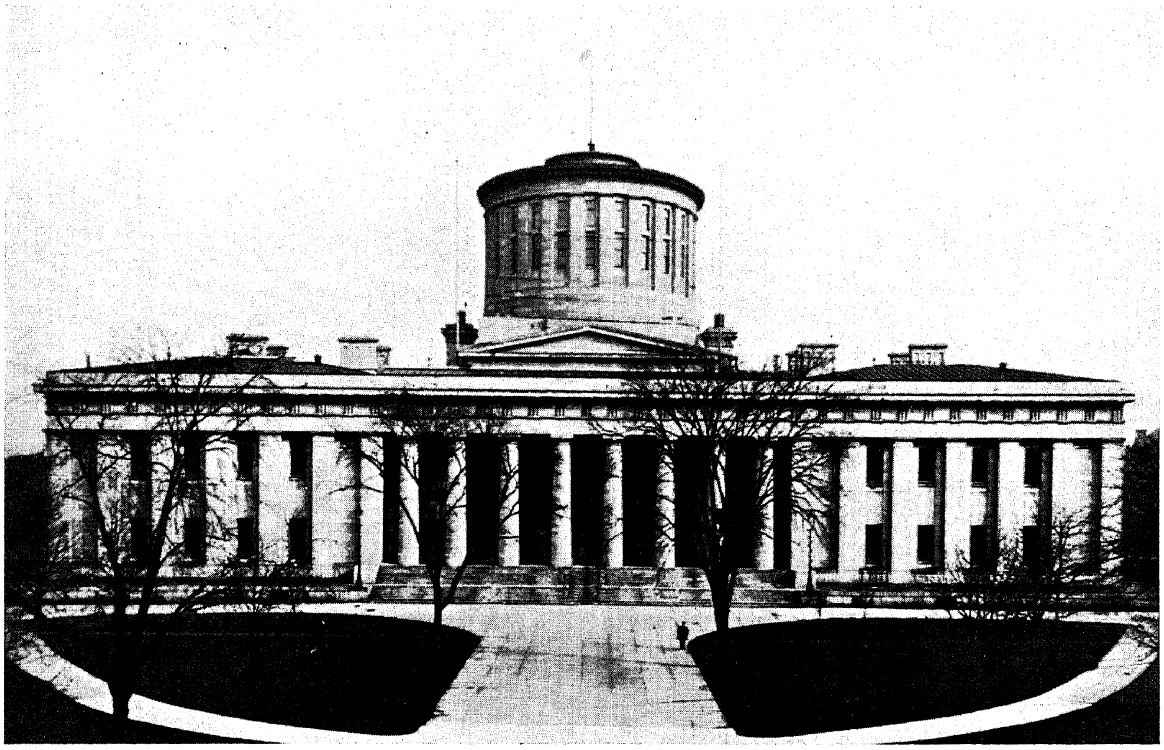


(B) Cuthbert Brodrick: Leeds, Corn Exchange, 1860–3

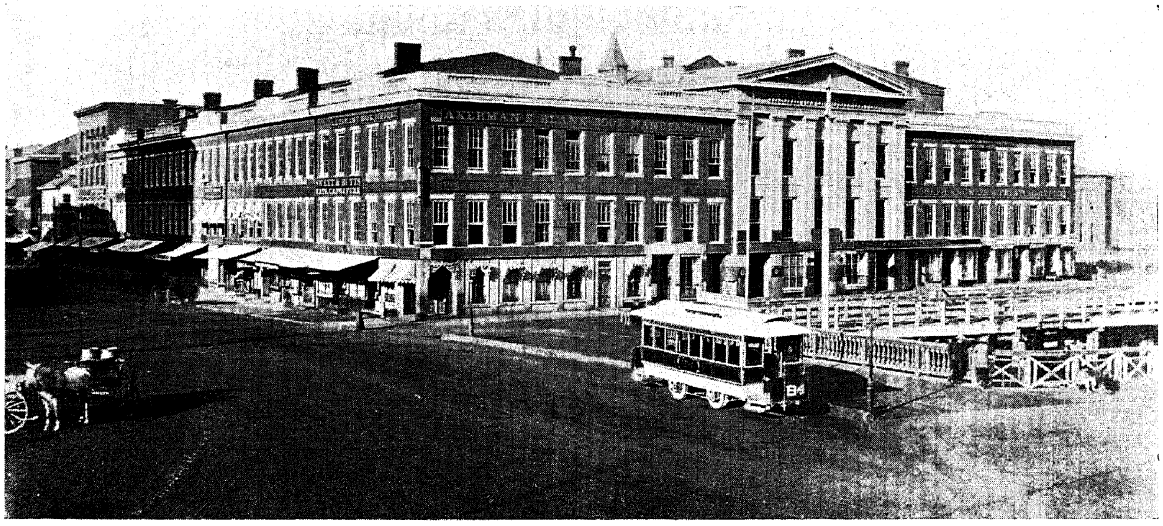
(A) Robert Mills: Washington, Treasury Department, 1836–42



(B) Thomas Jefferson: Charlottesville, Va., University of Virginia, 1817–26

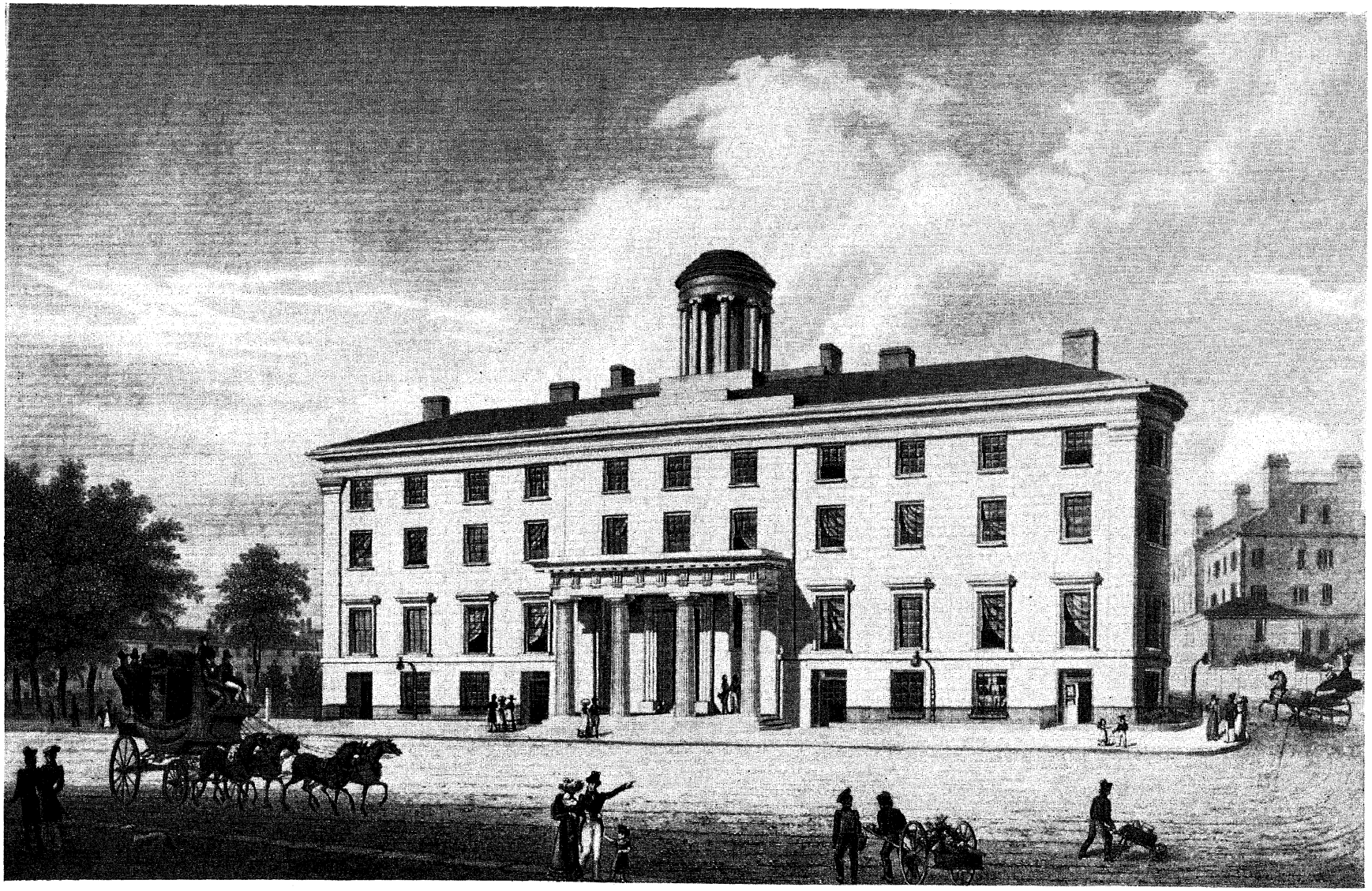


(A) Thomas U. Walter and others: Columbus, Ohio, State Capitol, 1839–61



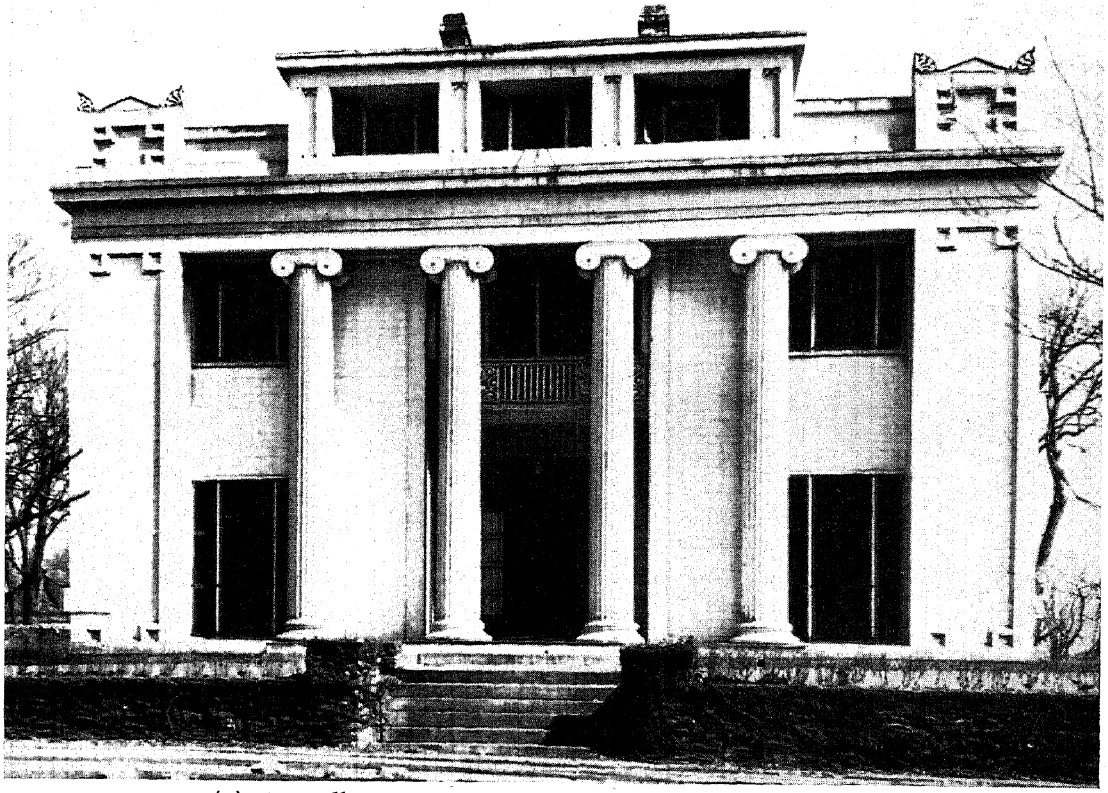
(B) James C. Bucklin: Providence, R.I., Washington Buildings, 1843

William Strickland: Philadelphia, Merchants' Exchange, 1832–4

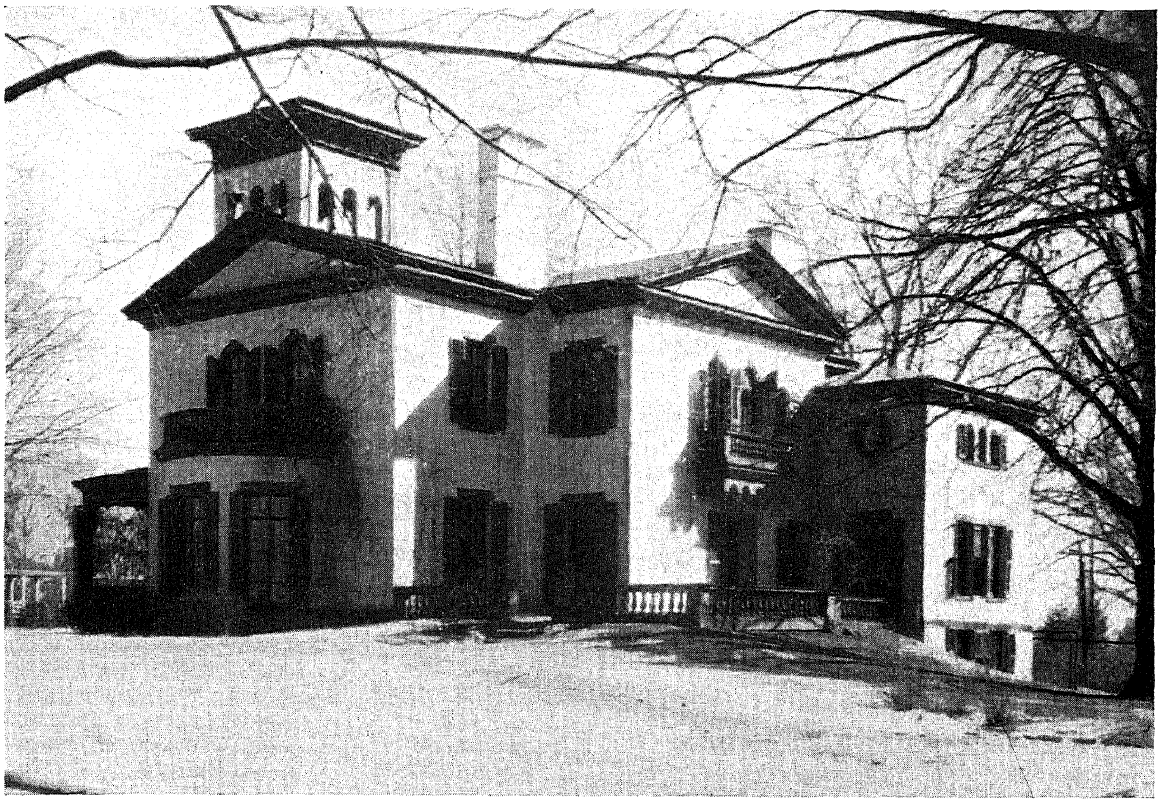


Isaiah Rogers: Boston, Tremont House, 1828–9

(A) A. J. Davis: New York, Colonnade Row, 1832

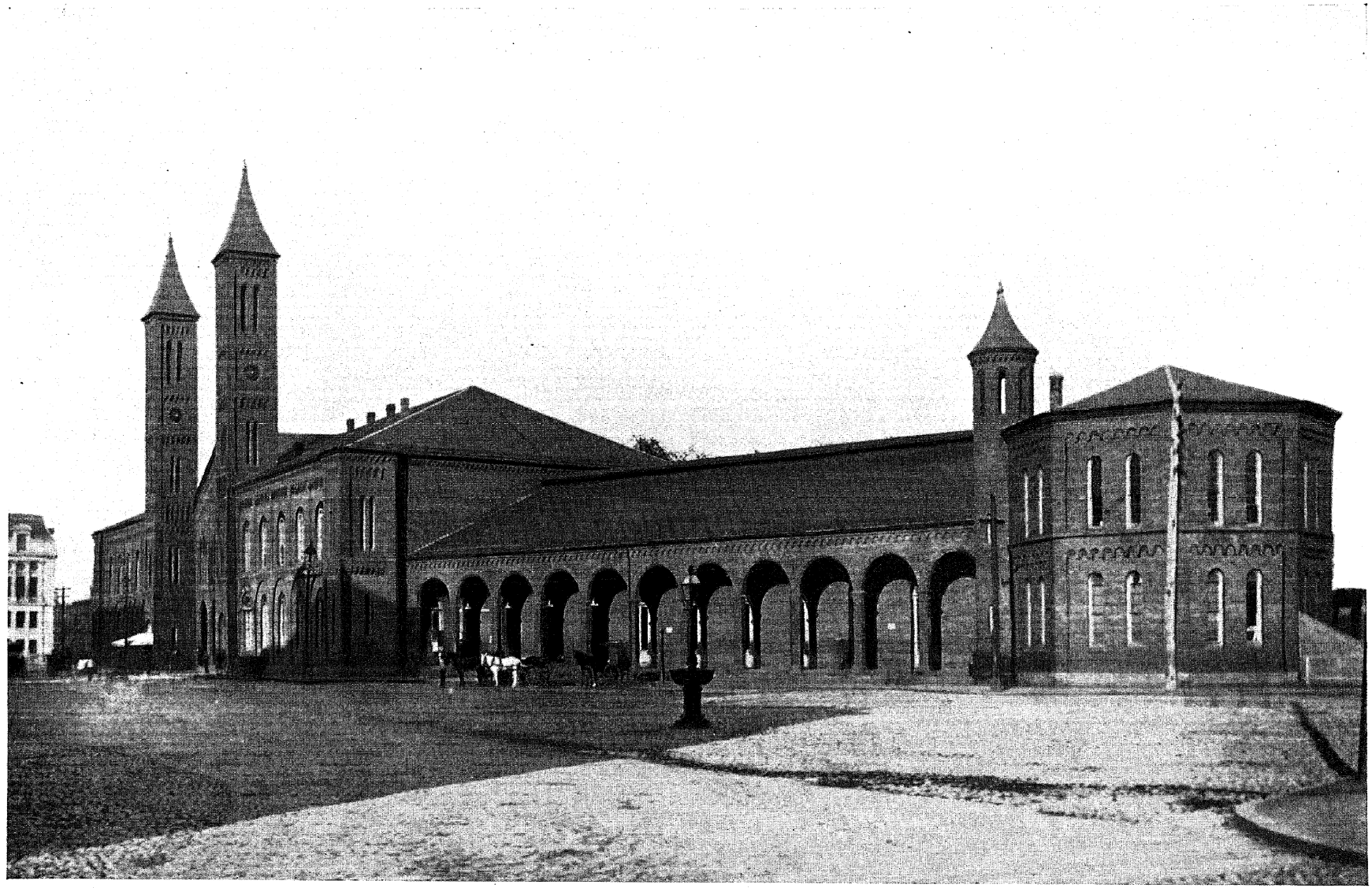


(B) Russell Warren: Newport, R.I., Elmhyrst, *c.* 1833

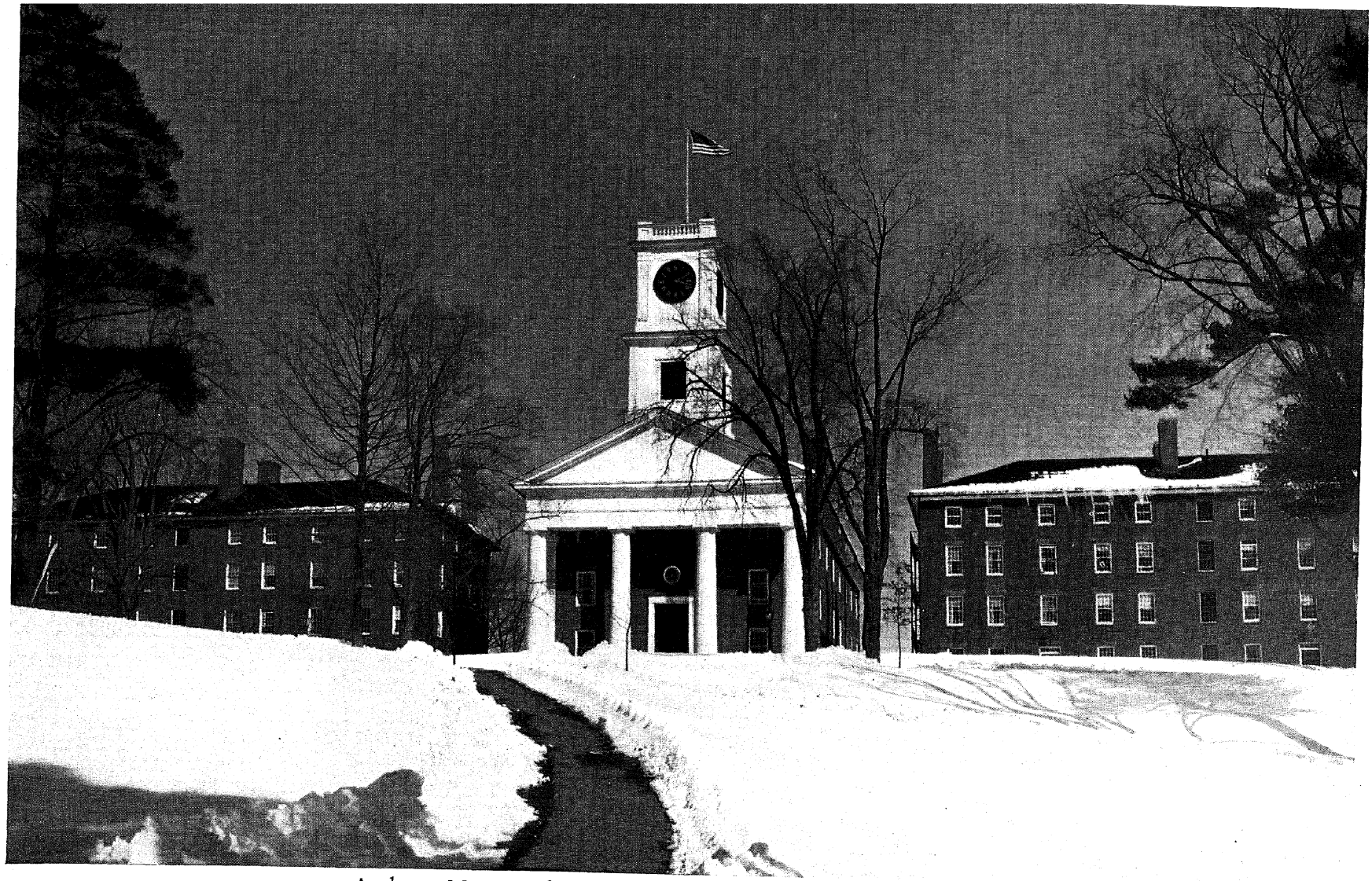


(A) Henry A. Sykes: Springfield, Mass., Stebbins house, 1849

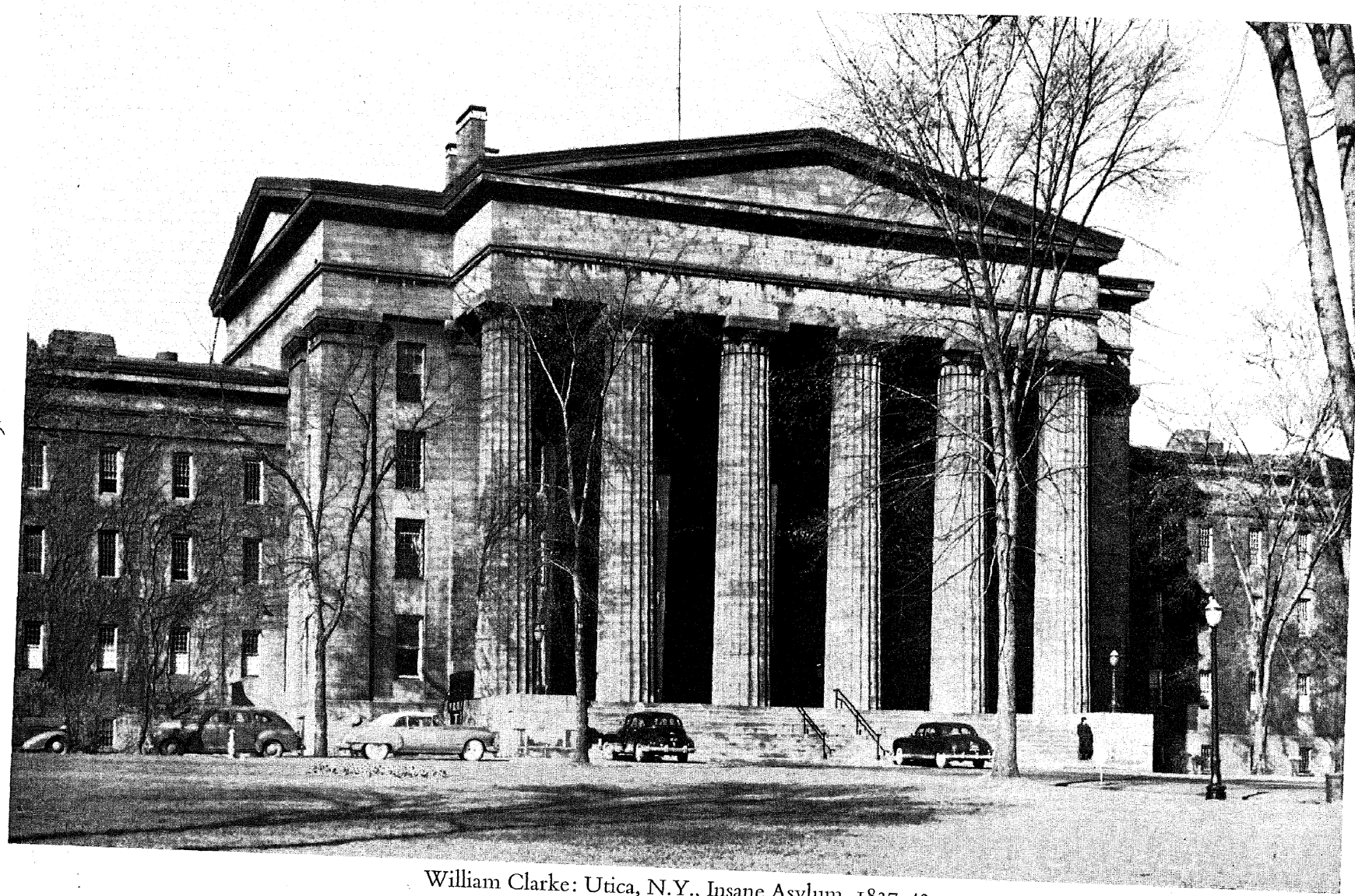
(B) Alexander Parris: Boston, David Sears house, 1816



Thomas A. Tefft: Providence, R.I., Union Station, begun 1848

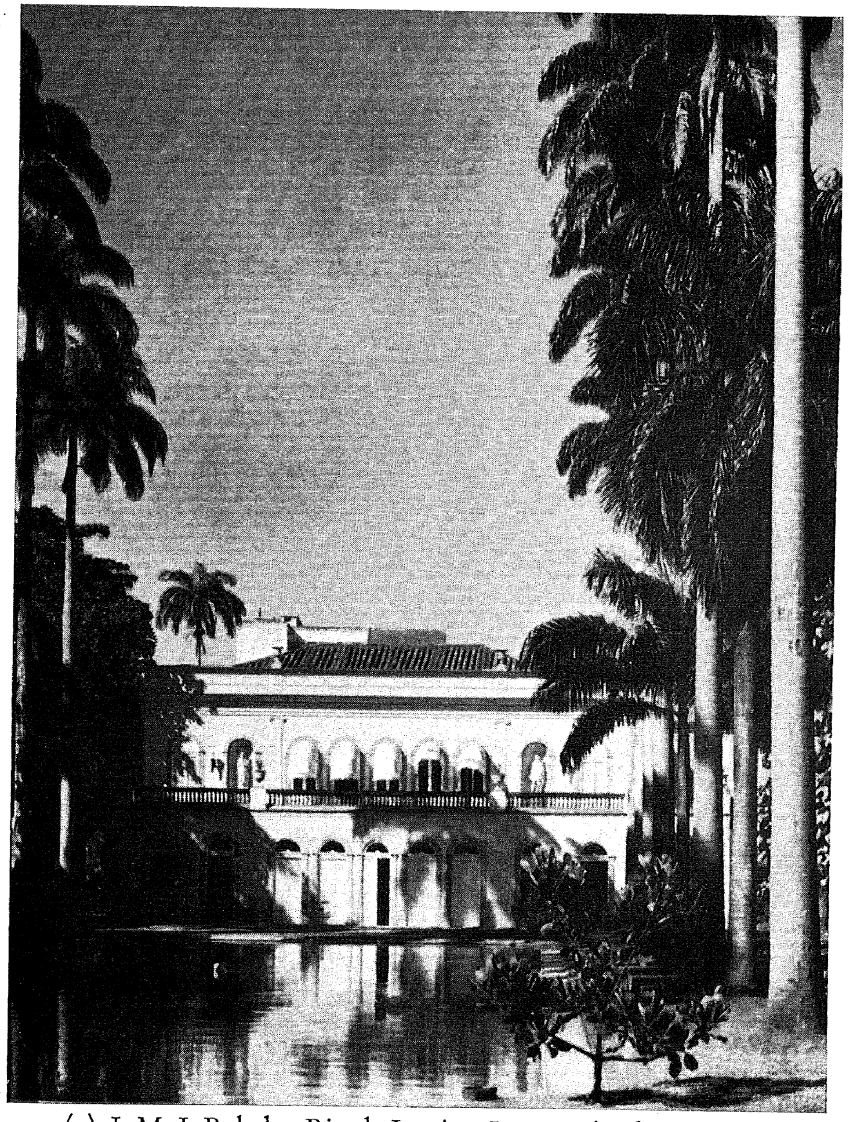


Amherst, Mass., Amherst College, Dormitories, 1821–2, Chapel, 1827



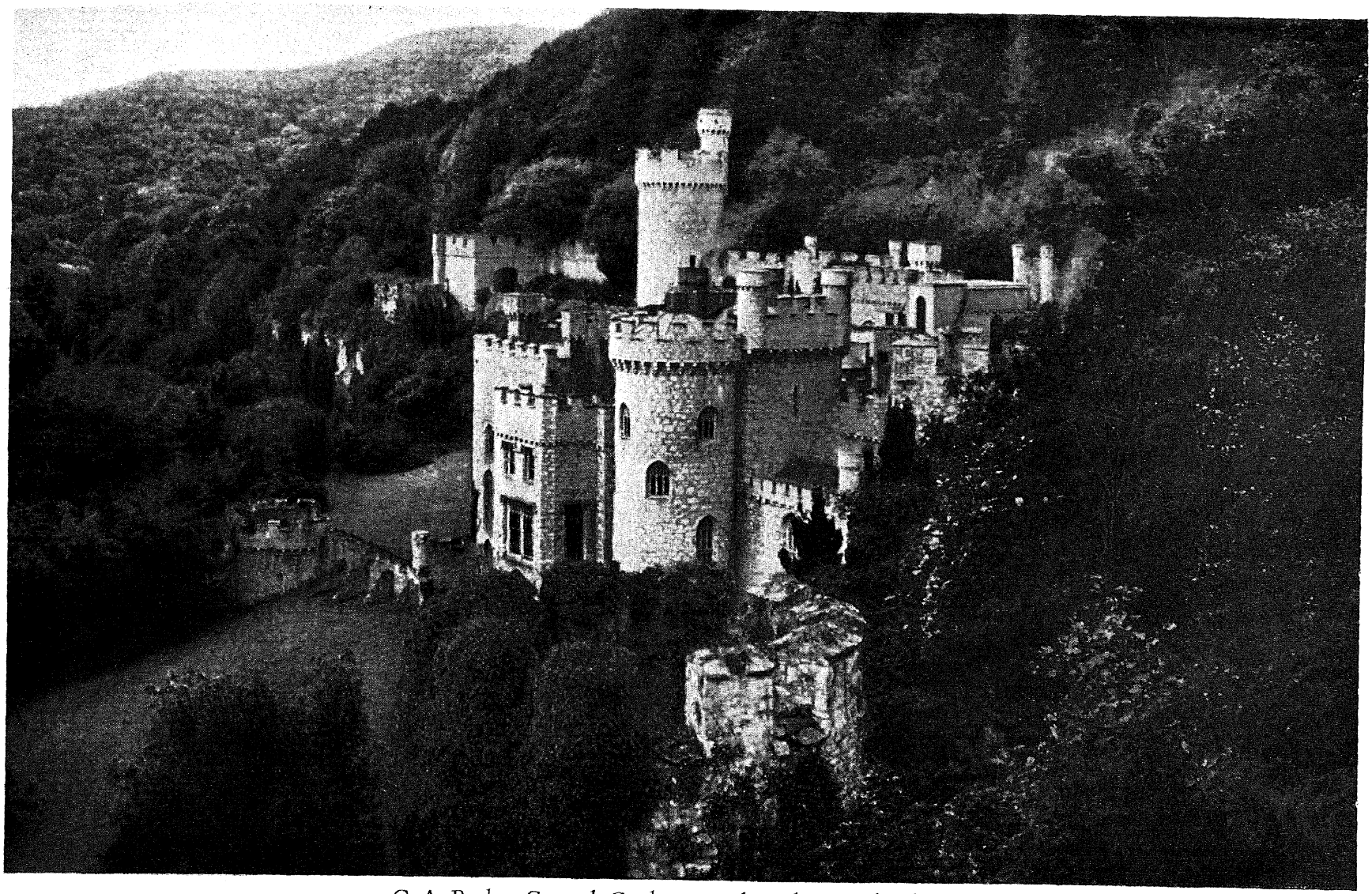
William Clarke: Utica, N.Y., Insane Asylum, 1837–43

(A) John Notman: Philadelphia, Atheneum, 1845–7



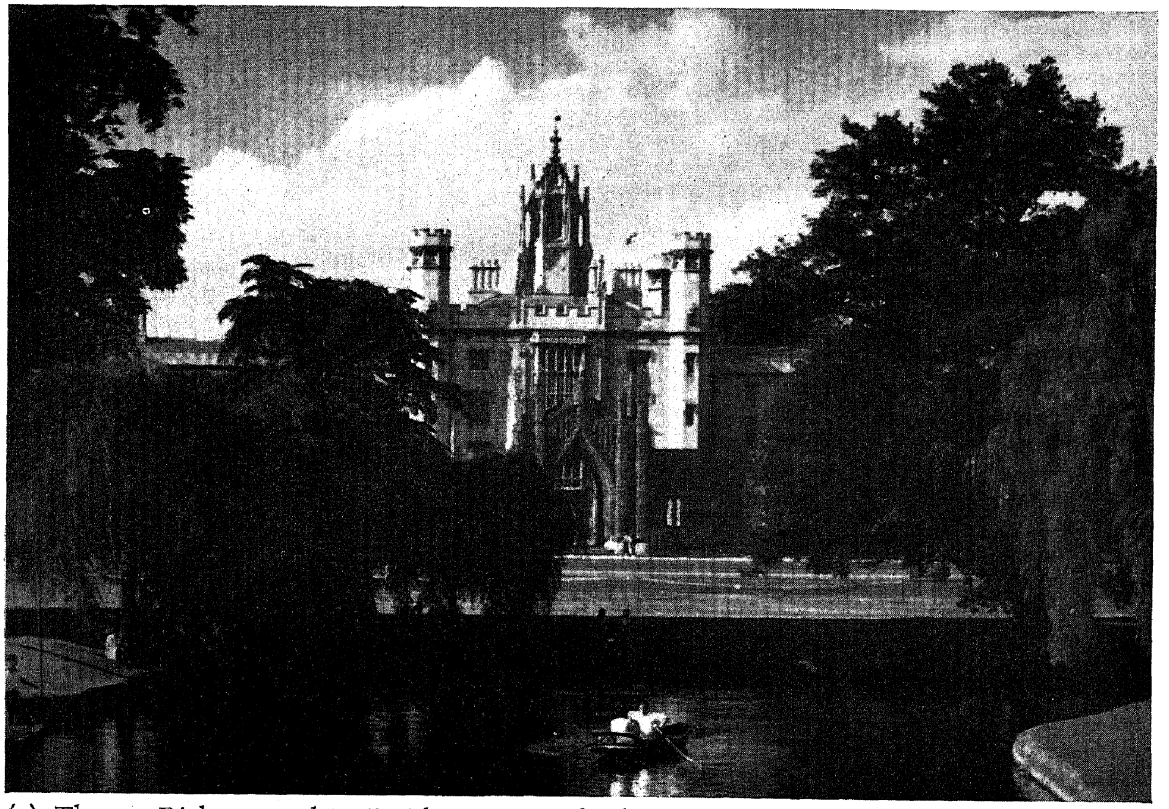
(B) J. M. J. Rebelo: Rio de Janeiro, Itamaratí Palace, 1851–4

John Nash: Brighton, Royal Pavilion, as remodelled 1815–23

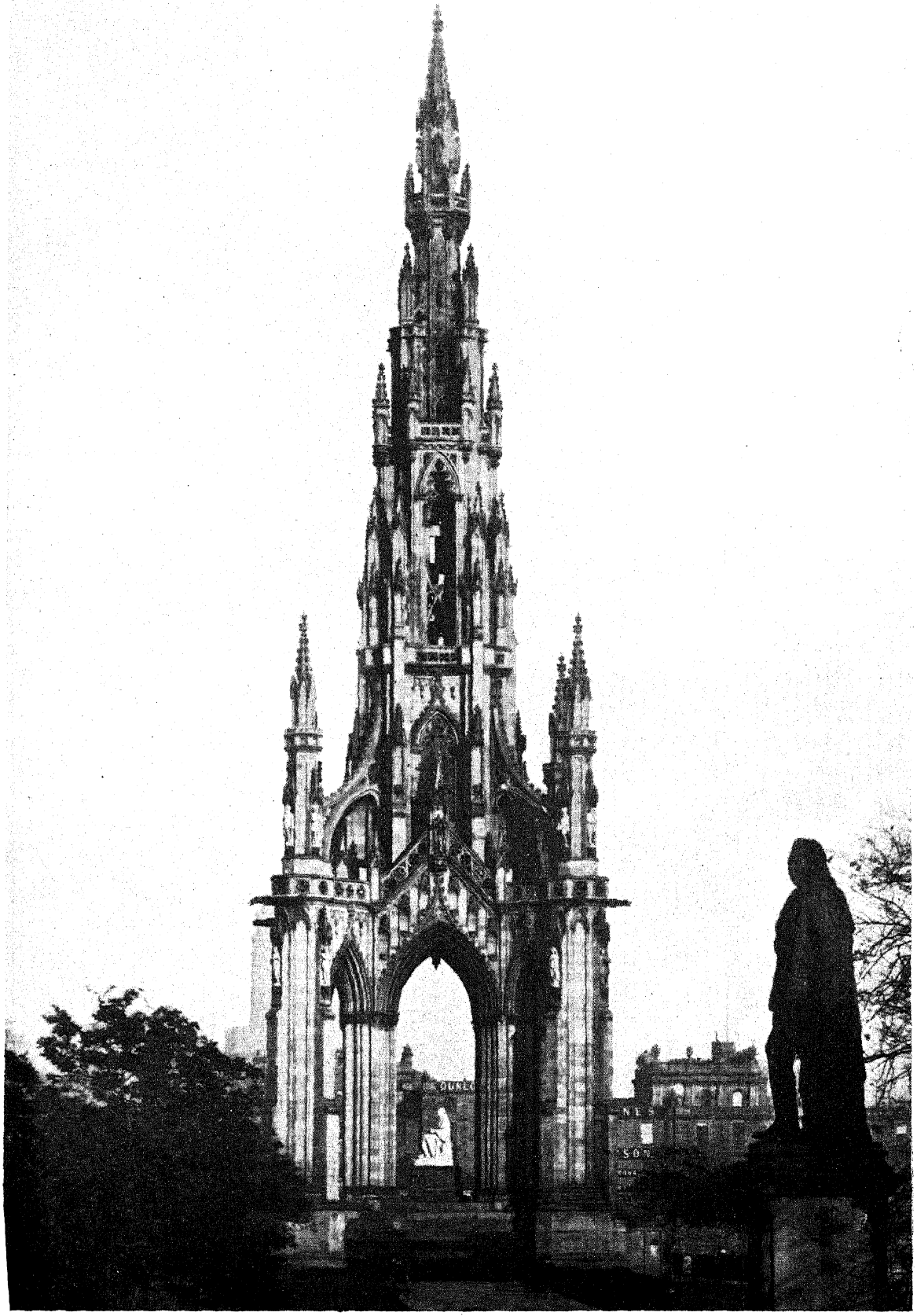


C. A. Busby: Gwrych Castle, near Abergele, completed 1815

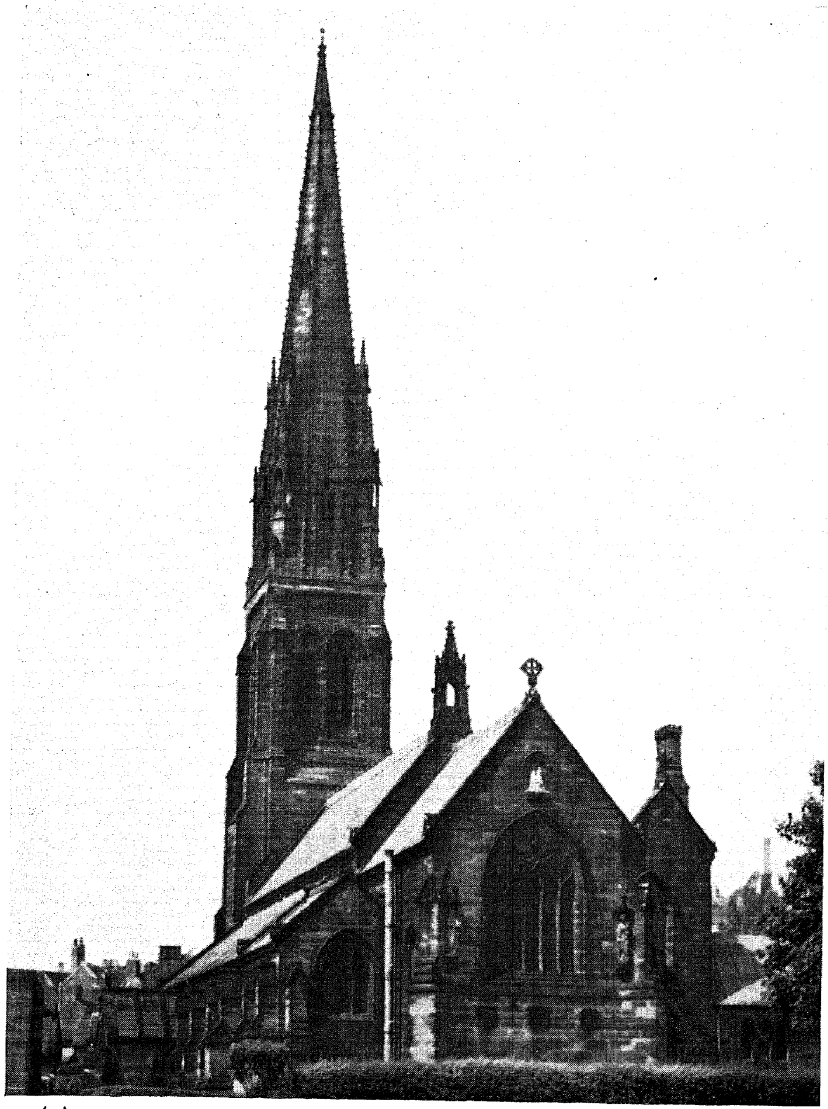
(A) John Nash: Blaise Hamlet, near Bristol, 1811



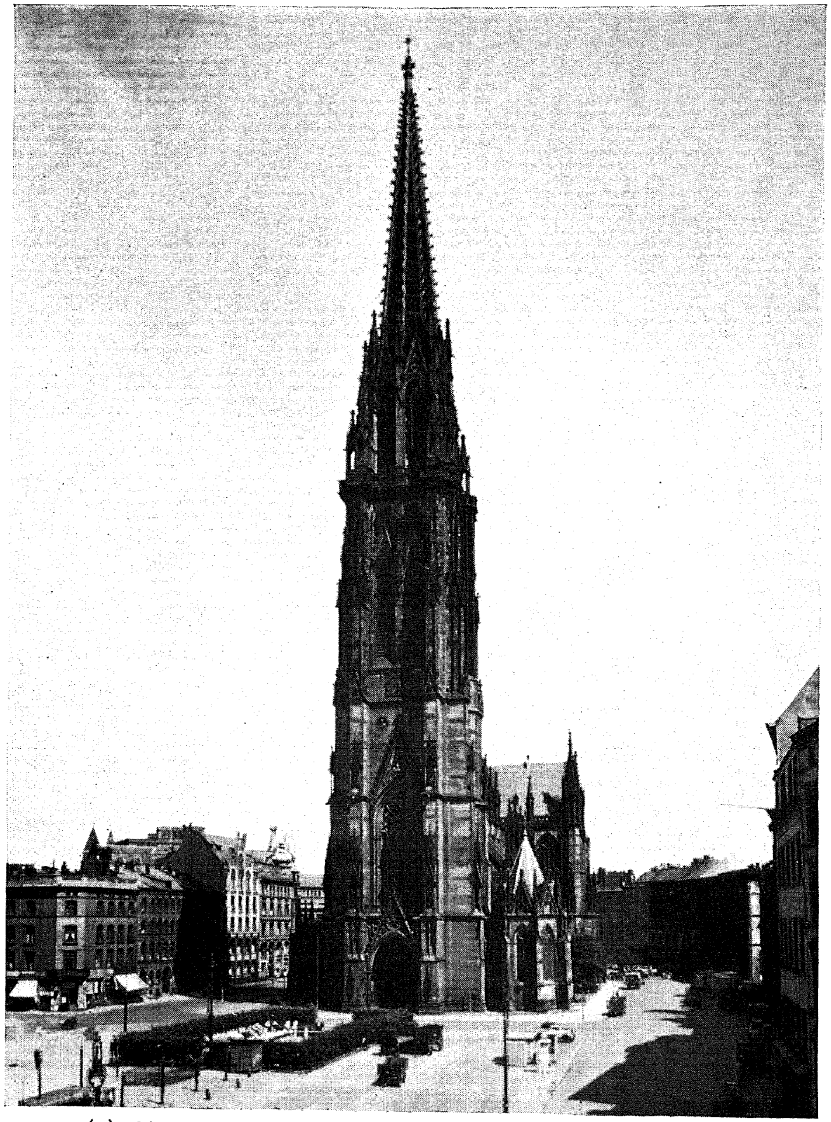
(B) Thomas Rickman and H. Hutchinson: Cambridge, St John's College, New Court, 1825–31



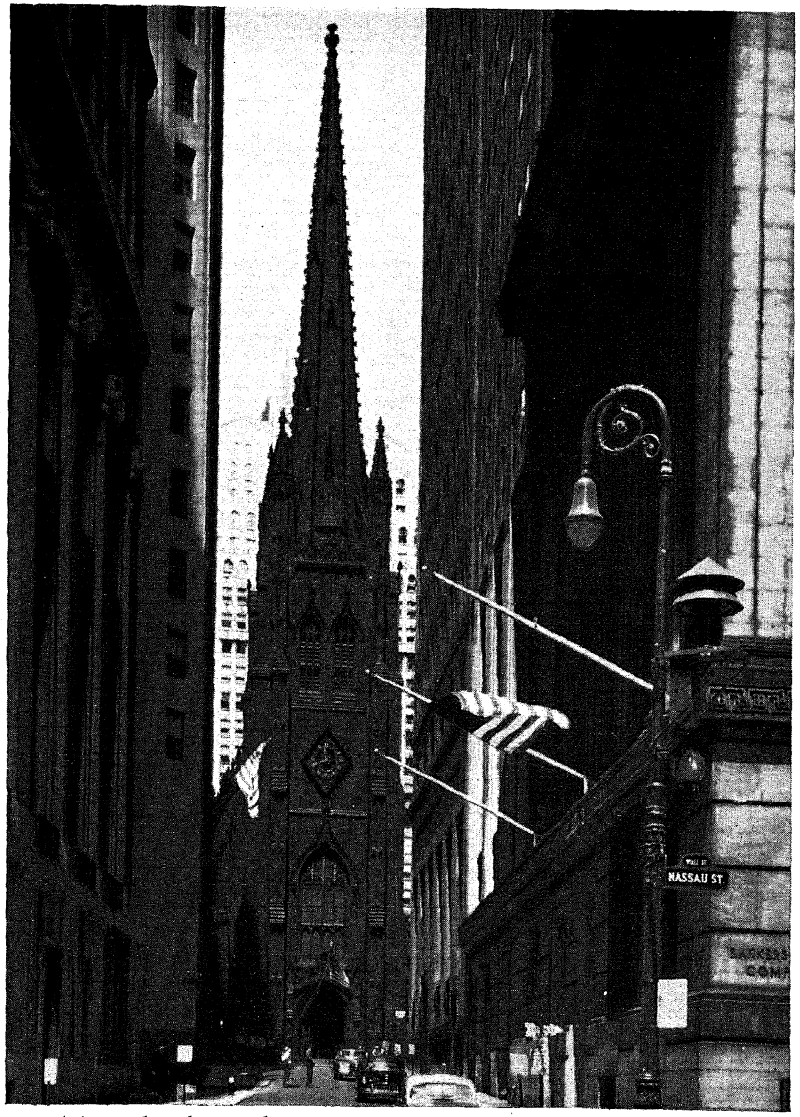
G. M. Kemp: Edinburgh, Sir Walter Scott Monument, 1840–6



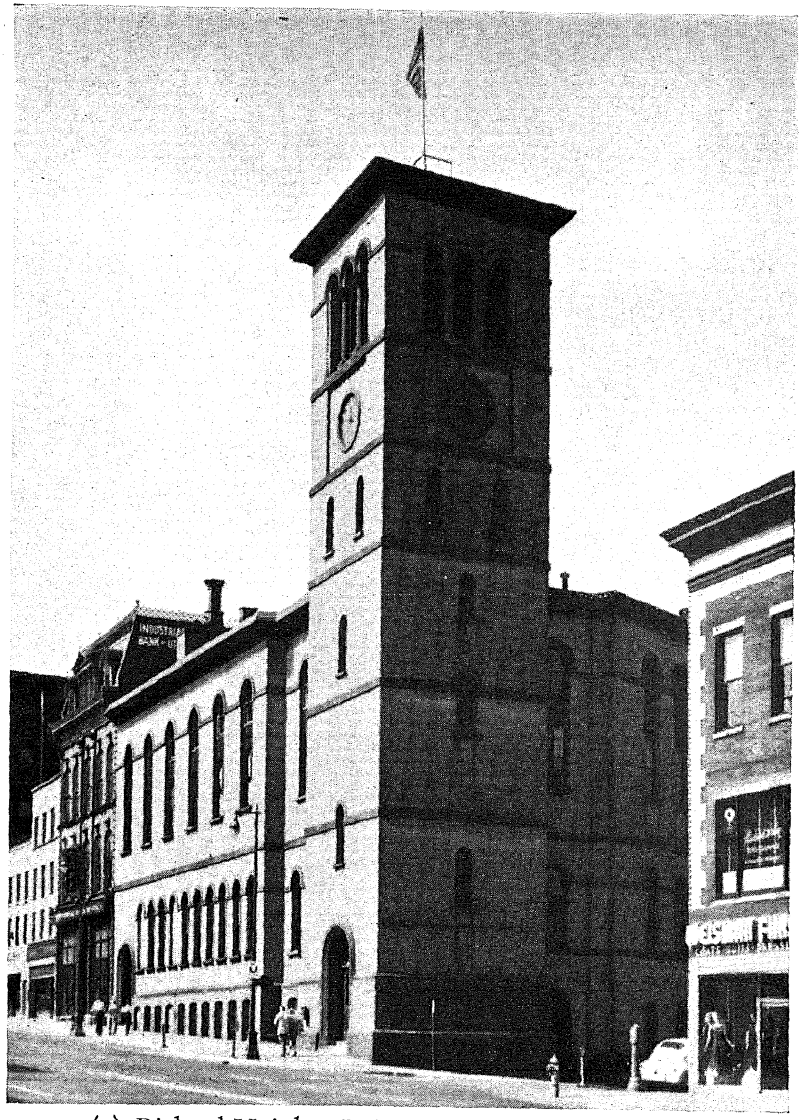
(A) A. W. N. Pugin: Cheadle, Staffordshire, St Giles's, 1841–6



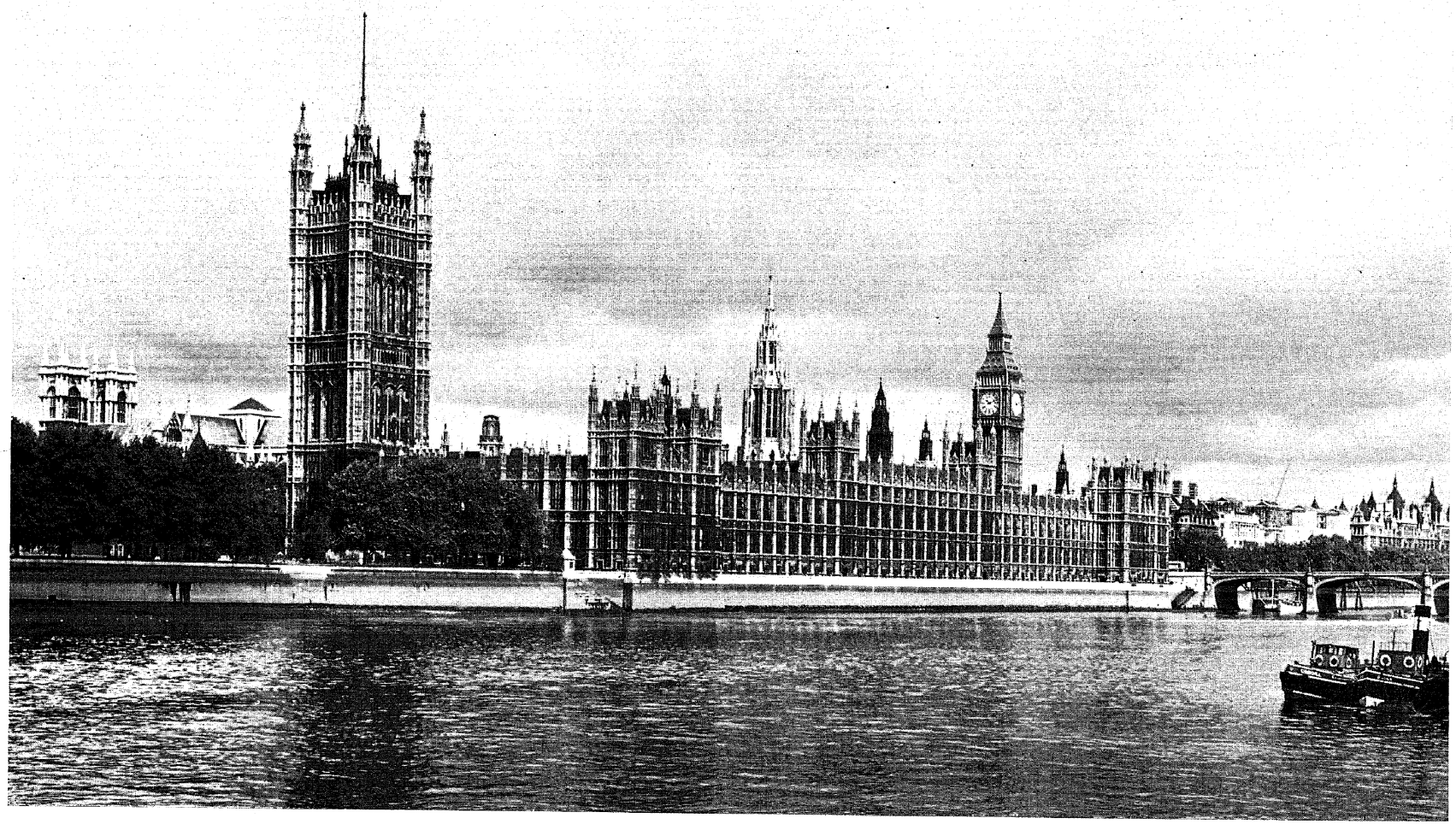
(B) Sir G. G. Scott: Hamburg, Nikolaikirche, 1845–63



(A) Richard Upjohn: New York, Trinity Church, 1839–46

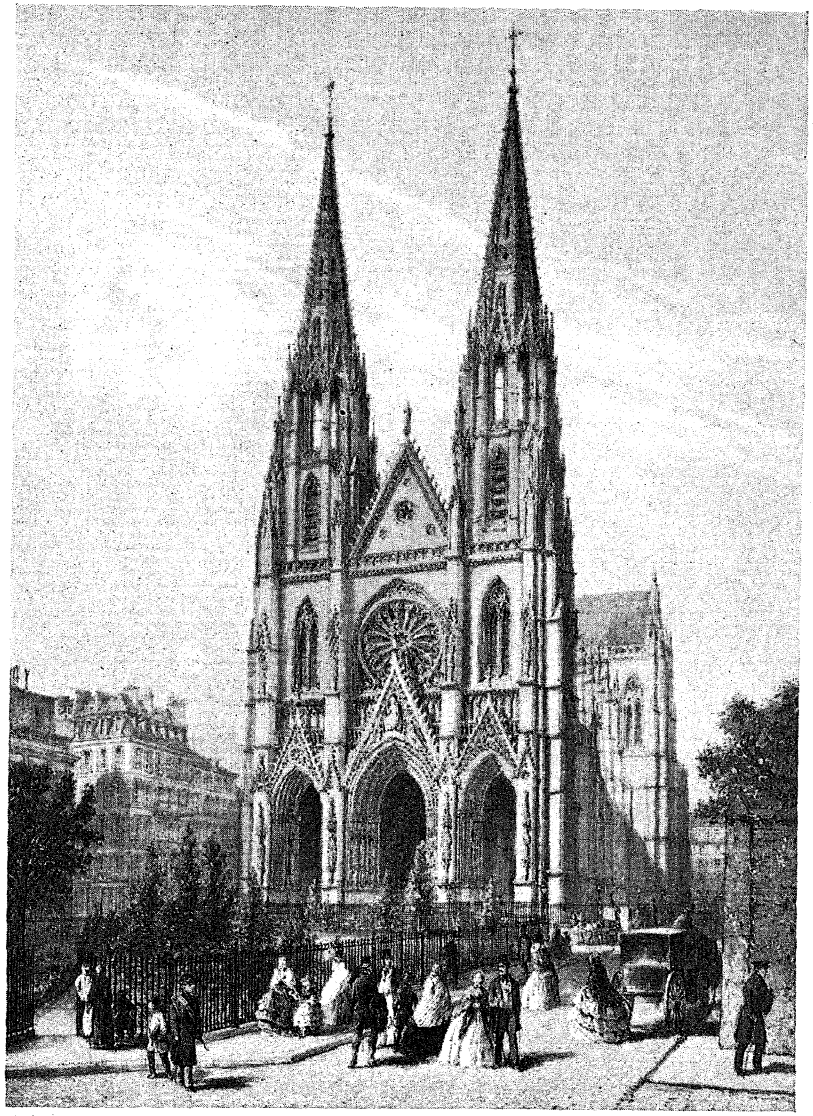


(B) Richard Upjohn: Utica, N.Y., City Hall, 1852–3



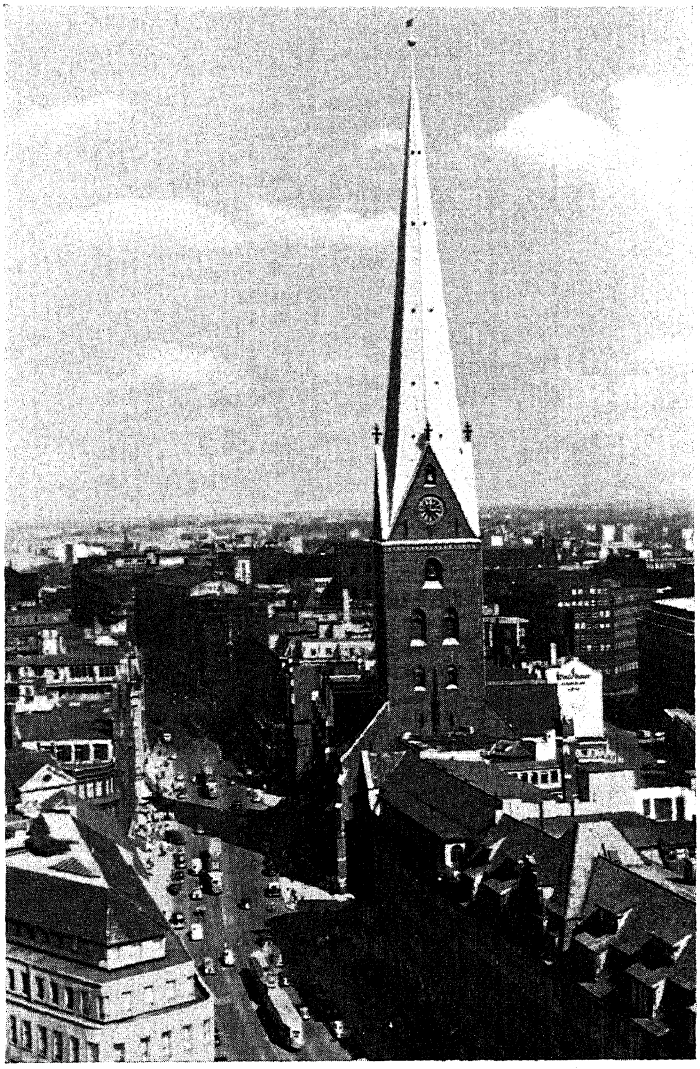
Sir Charles Barry: London, Houses of Parliament, 1840–65

(A) Salem, Mass., First Unitarian (North) Church, 1836–7

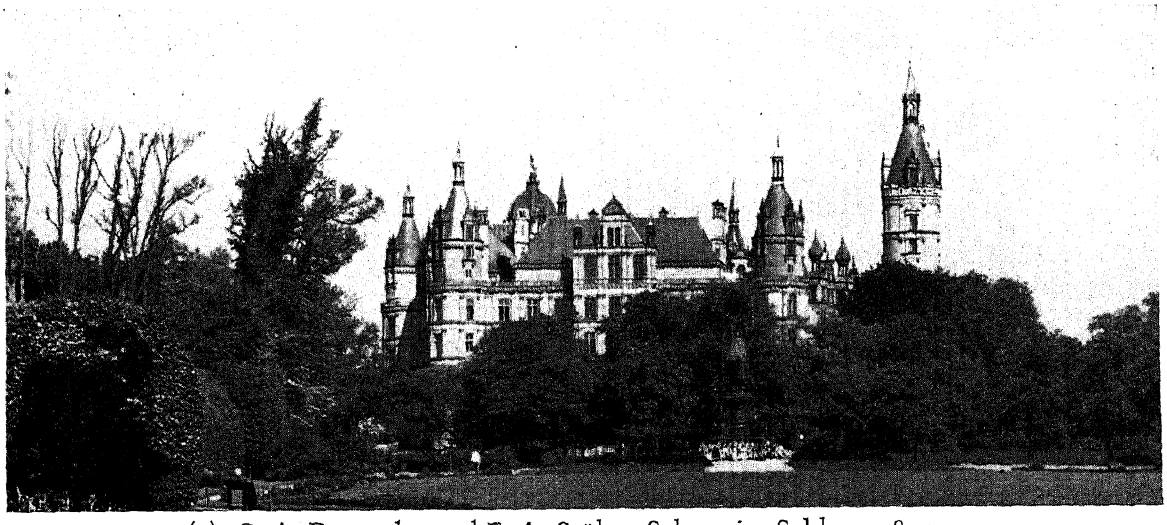


(B) F.-C. Gau and Théodore Ballu: Paris, Sainte-Clotilde, 1846–57

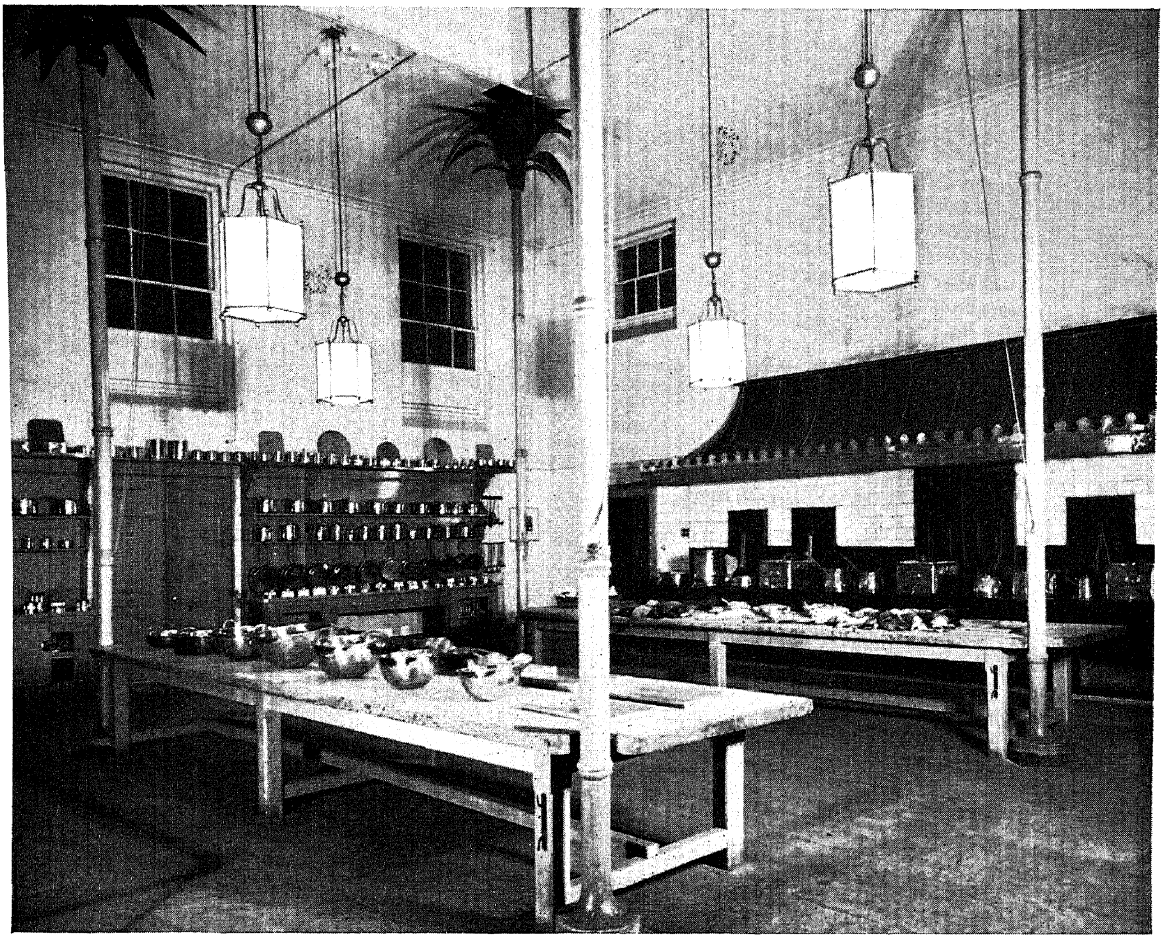
E.-E. Viollet-le-Duc: Paris, block of flats, Rue de Liège, 1846–8



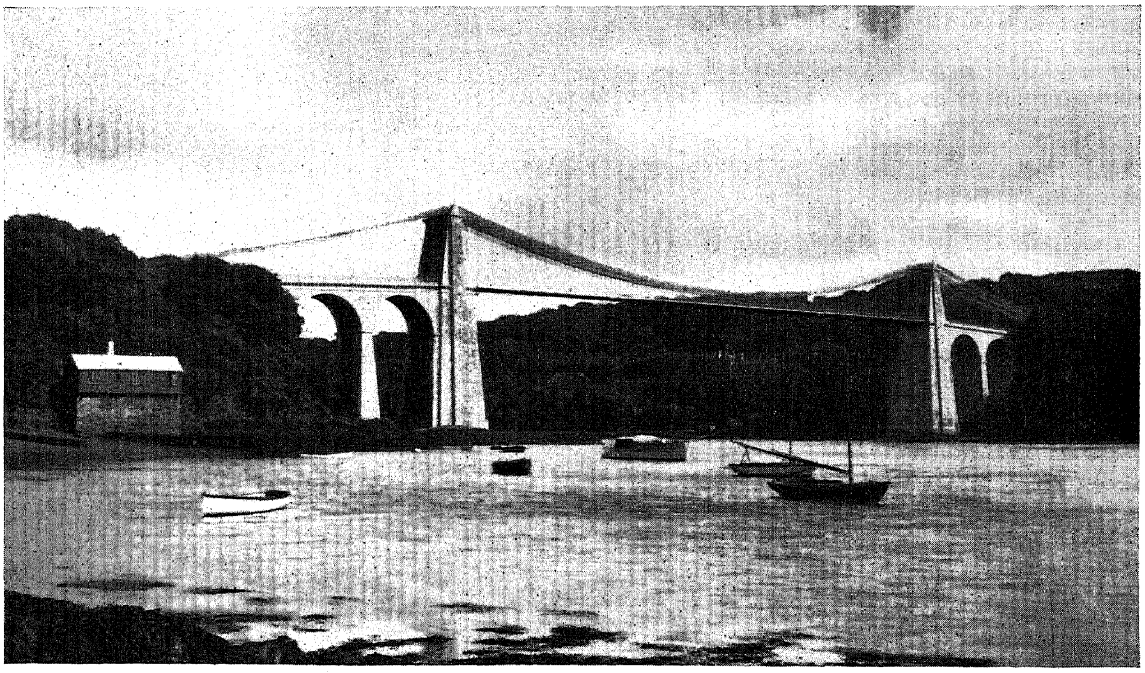
(A) Alexis de Chateauneuf and Fersenfeld:
Hamburg, Petrikirche, 1843–9



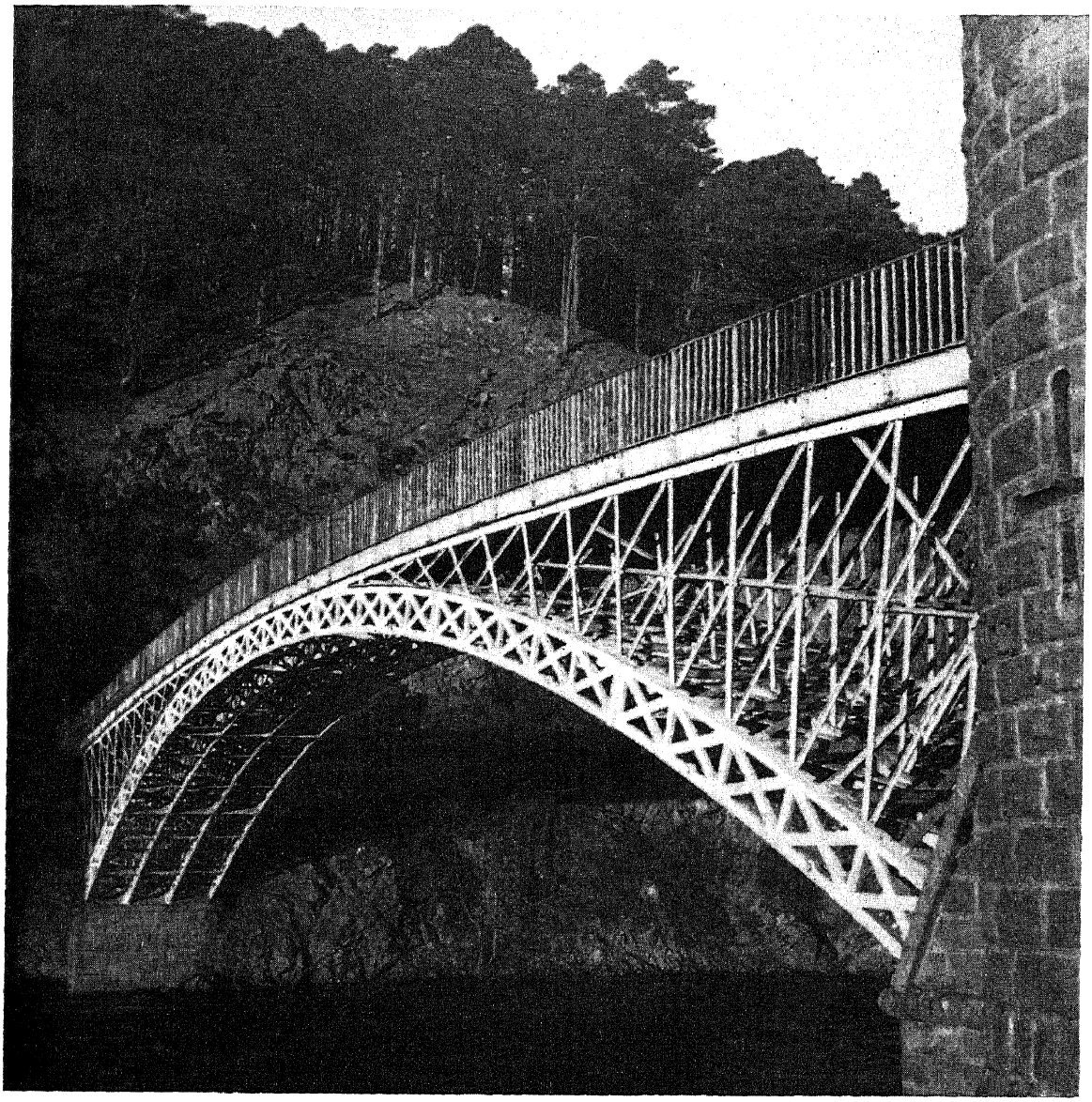
(B) G. A. Demmler and F. A. Stüler: Schwerin, Schloss, 1844–57



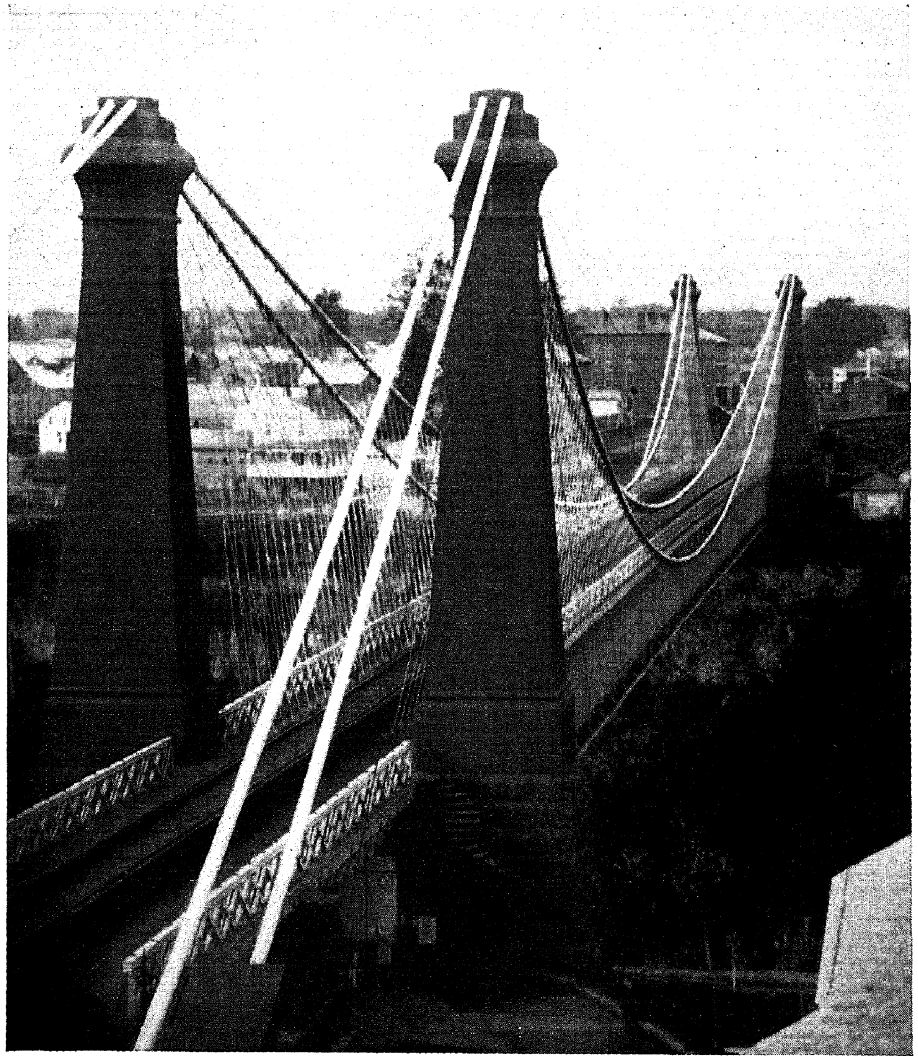
(A) John Nash: Brighton, Royal Pavilion, Kitchen, 1818–21



(B) Thomas Telford: Menai Strait, Menai Bridge, 1819–24

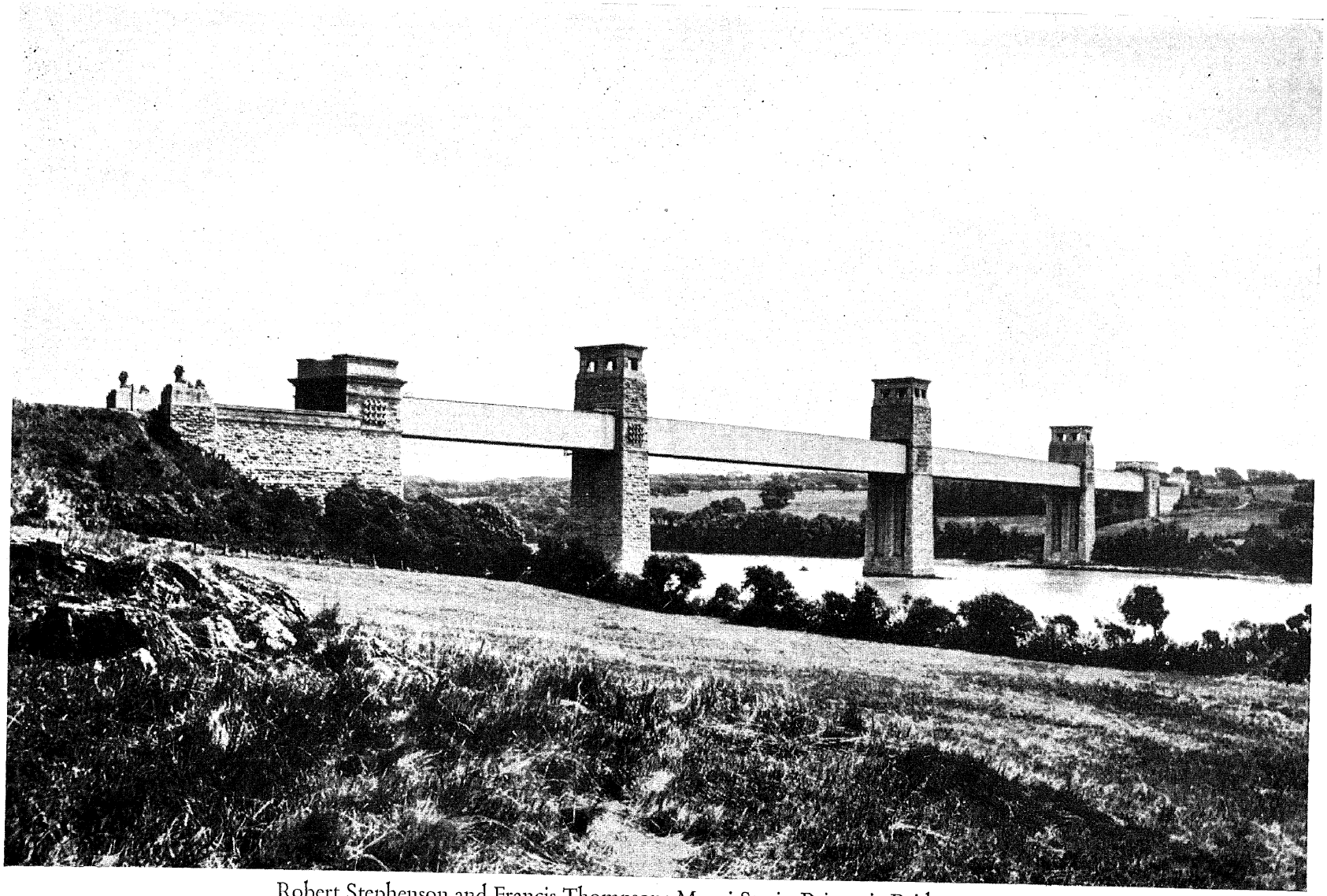


Thomas Telford: Craigellachie Bridge, 1815

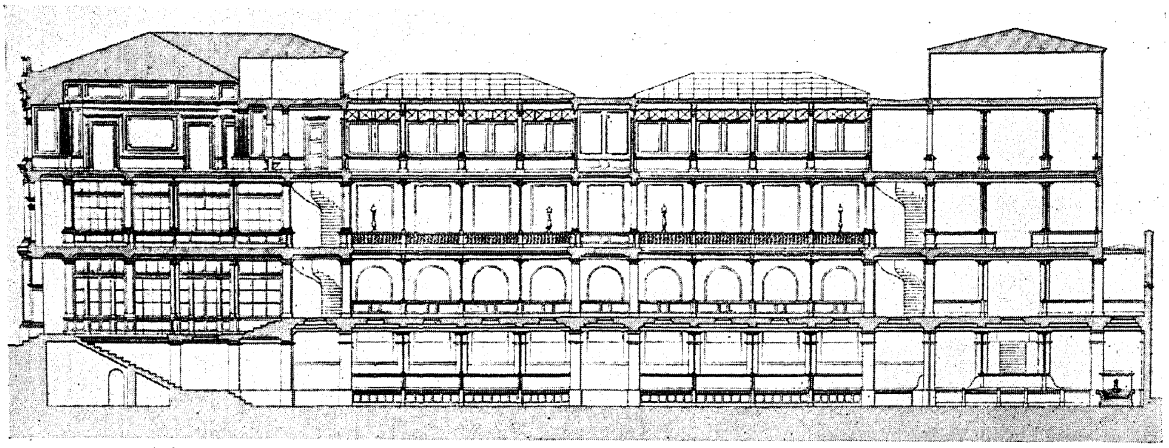


(A) John A. Roebling: Niagara Falls, Suspension Bridge, 1852

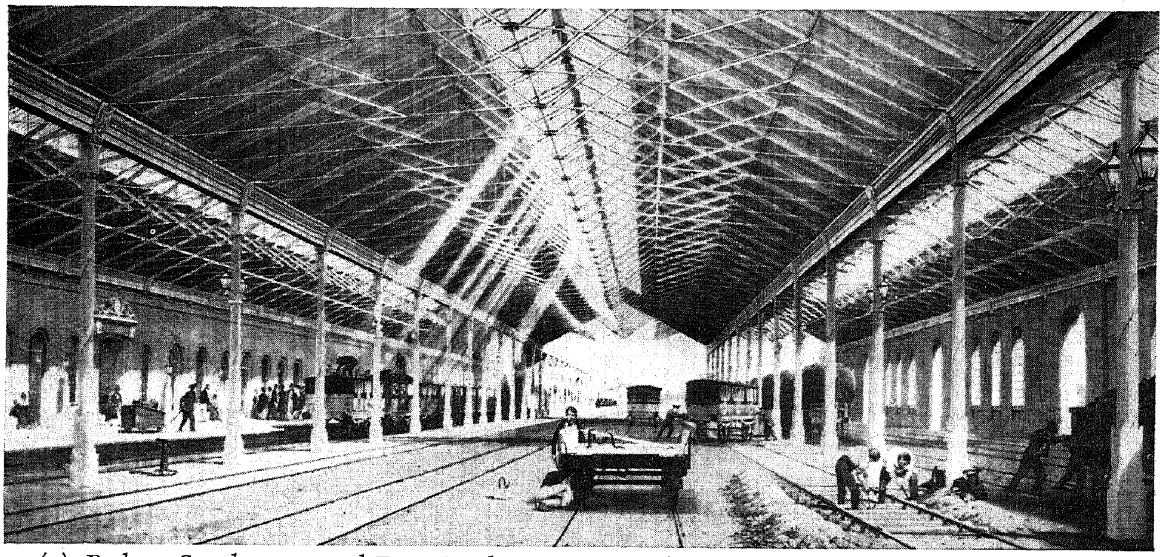
(B) Thomas Hopper: London, Carlton House, Conservatory, 1811–12



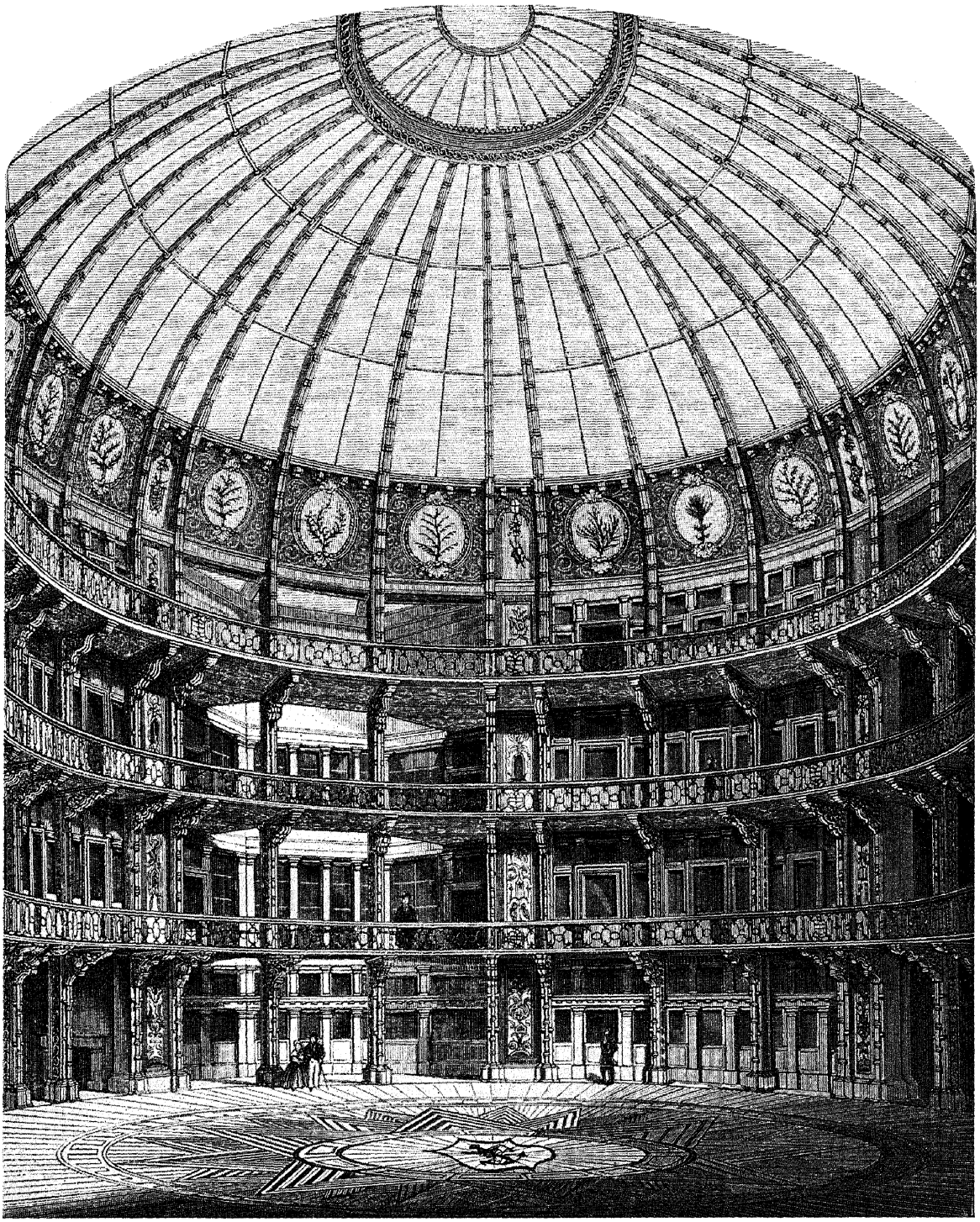
Robert Stephenson and Francis Thompson: Menai Strait, Britannia Bridge, 1845–50



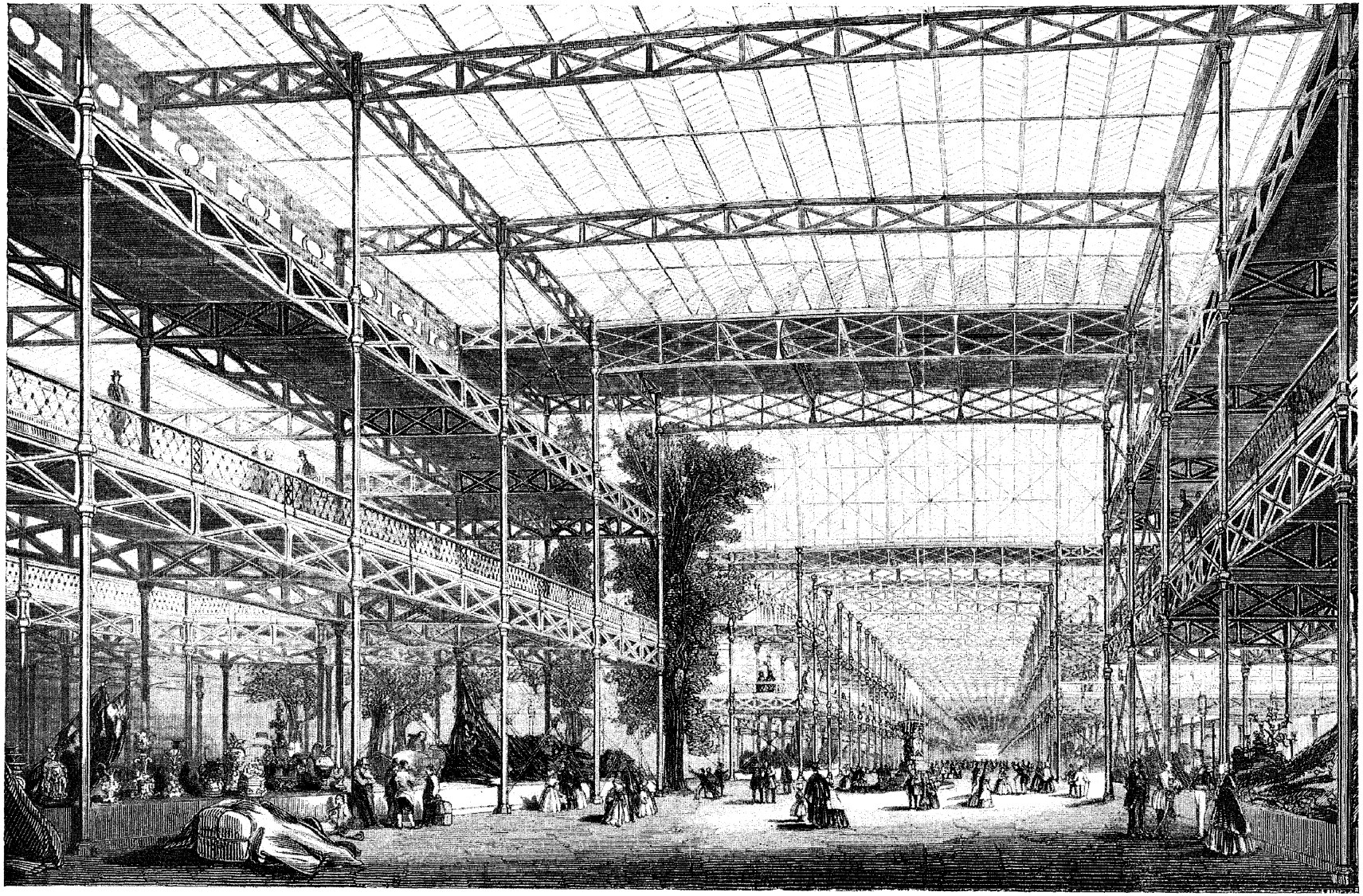
(A) Grisart & Froehlicher: Paris, Galeries du Commerce et de l'Industrie, section, 1838



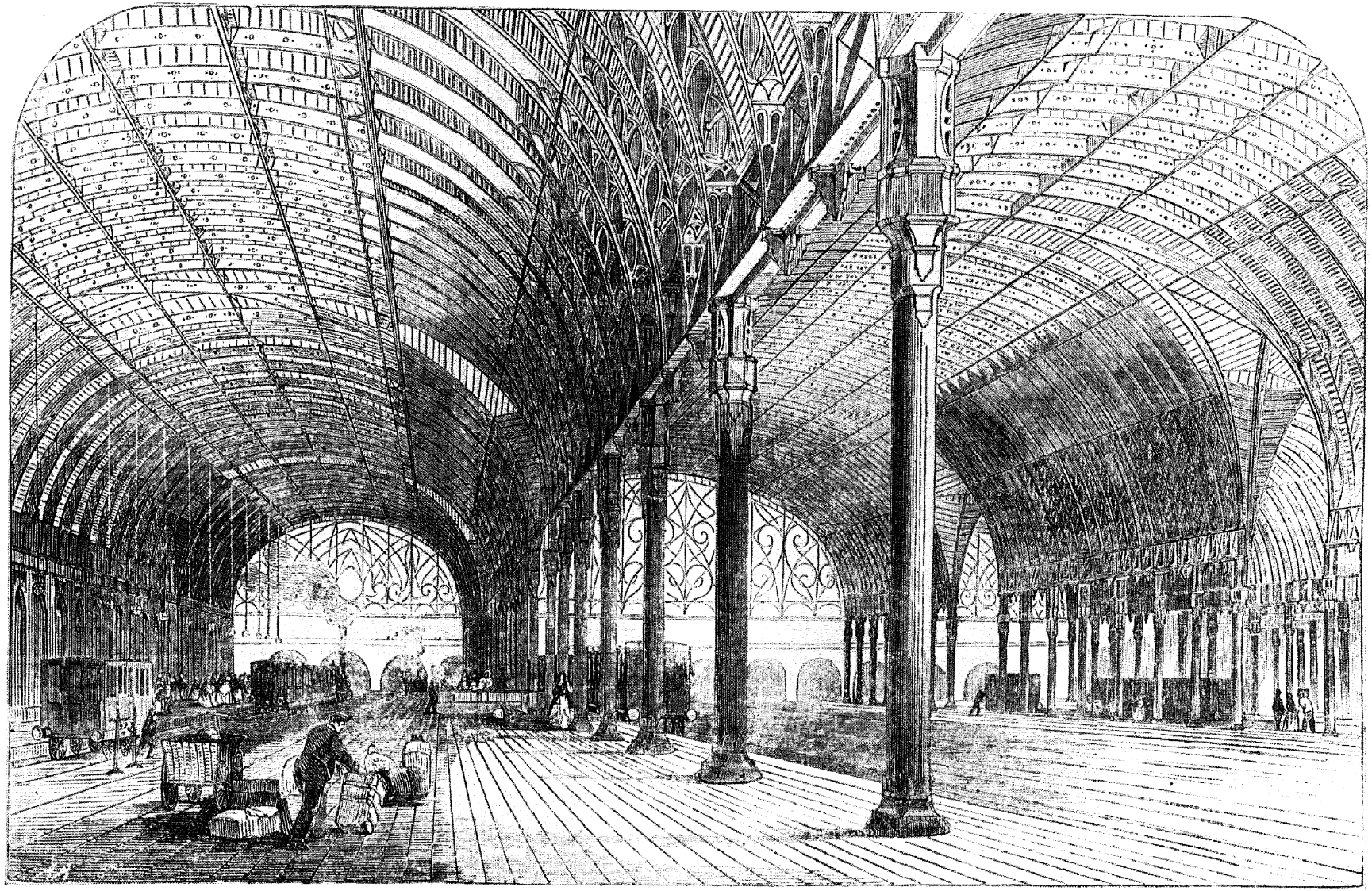
(B) Robert Stephenson and Francis Thompson: Derby, Trijunct Railway Station, 1839–41



J. B. Bunning: London, Coal Exchange, 1846–9

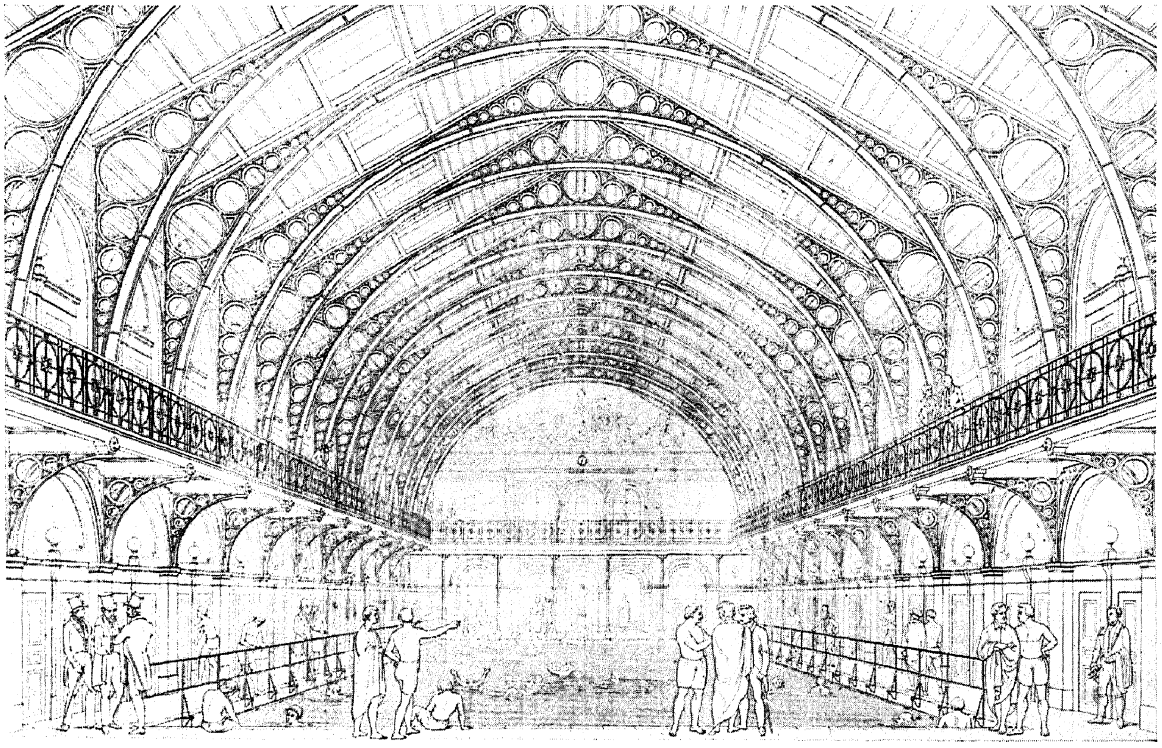


Sir Joseph Paxton and Fox & Henderson: London, Crystal Palace, 1850–1

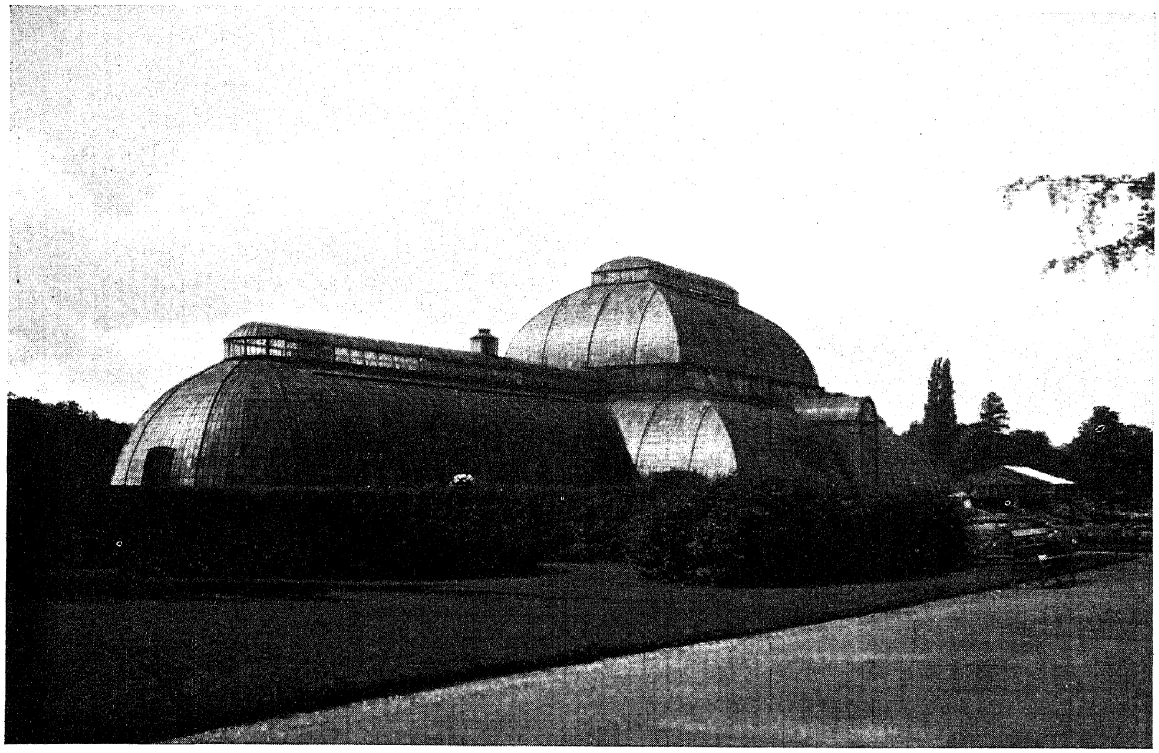


I. K. Brunel and Sir M. D. Wyatt: London, Paddington Station, 1852–4

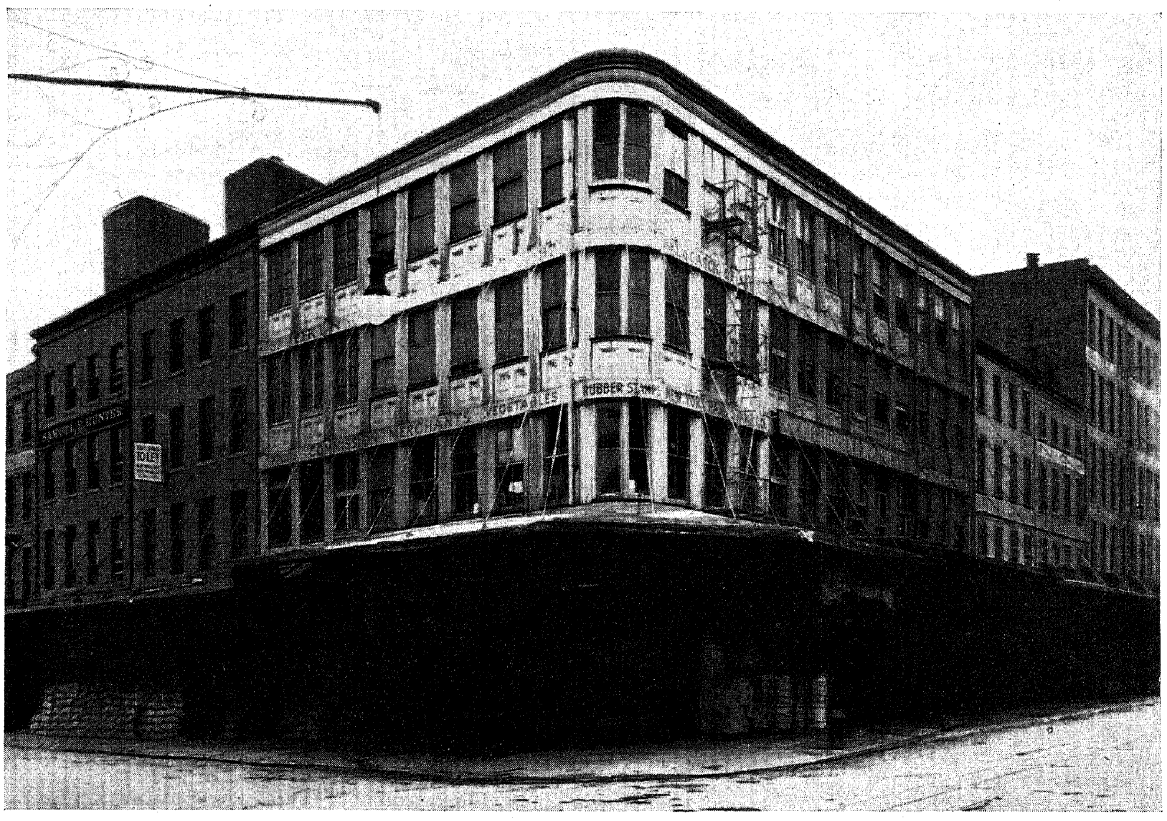
(A) Lewis Cubitt: London, King's Cross Station, 1851–2



(B) Karl Etzel: Vienna, Dianabad, 1841–3

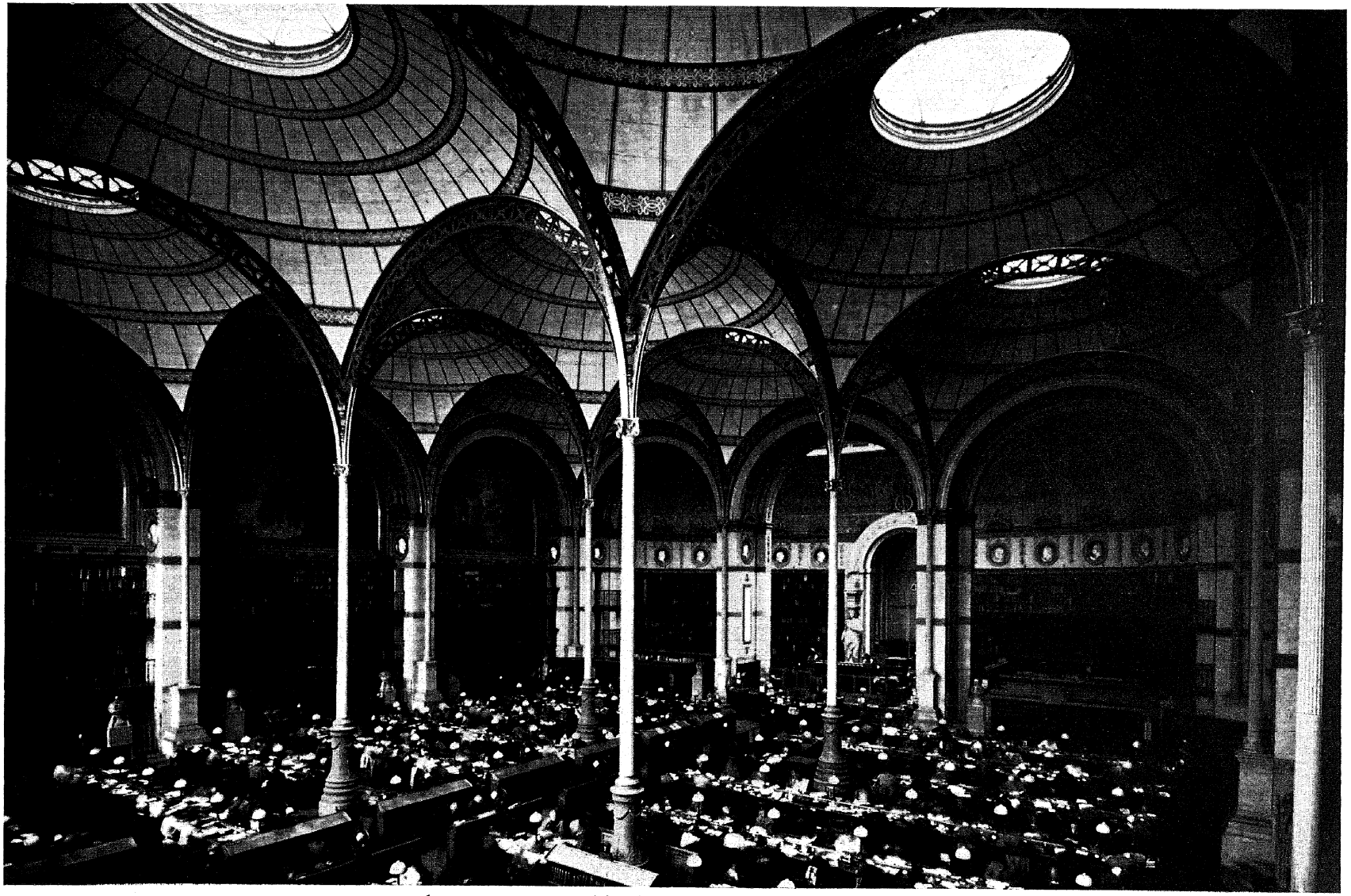


(A) Decimus Burton and Richard Turner: Kew, Palm Stove, 1845–7

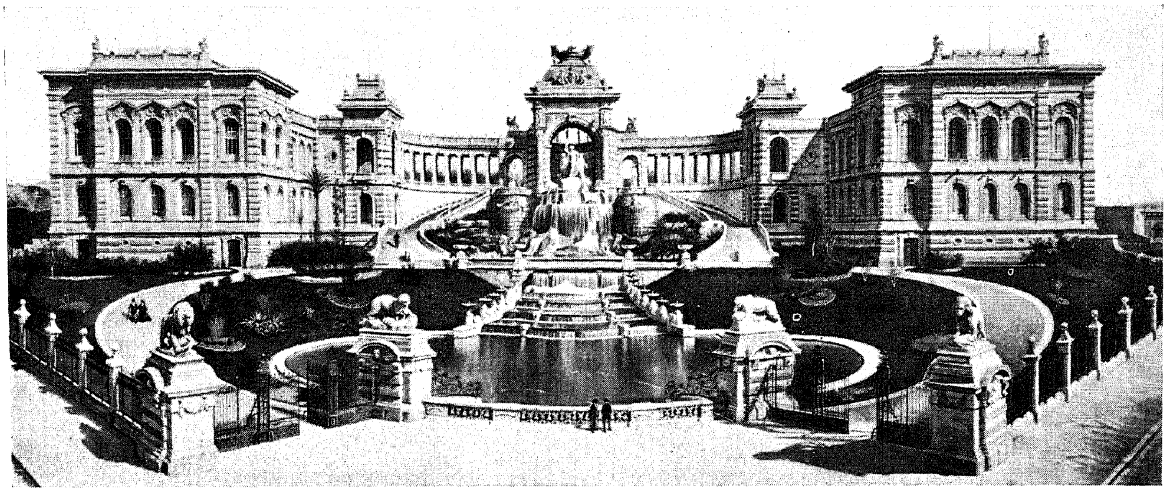


(B) James Bogardus: New York, Laing Stores, 1849

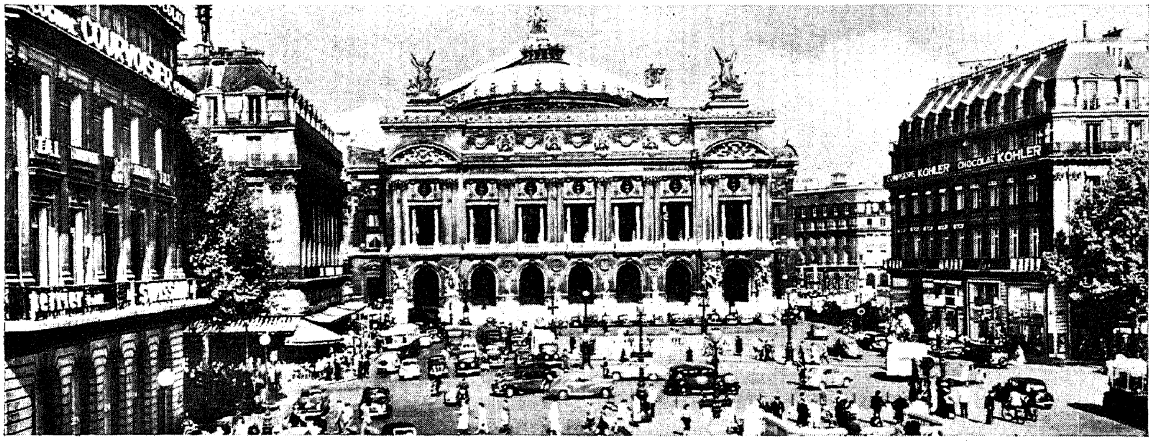
L.-T.-J. Visconti and H.-M. Lefuel: Paris, New Louvre, 1852–7



H.-P.-F. Labrouste: Paris, Bibliothèque Nationale, Reading Room, 1862–8



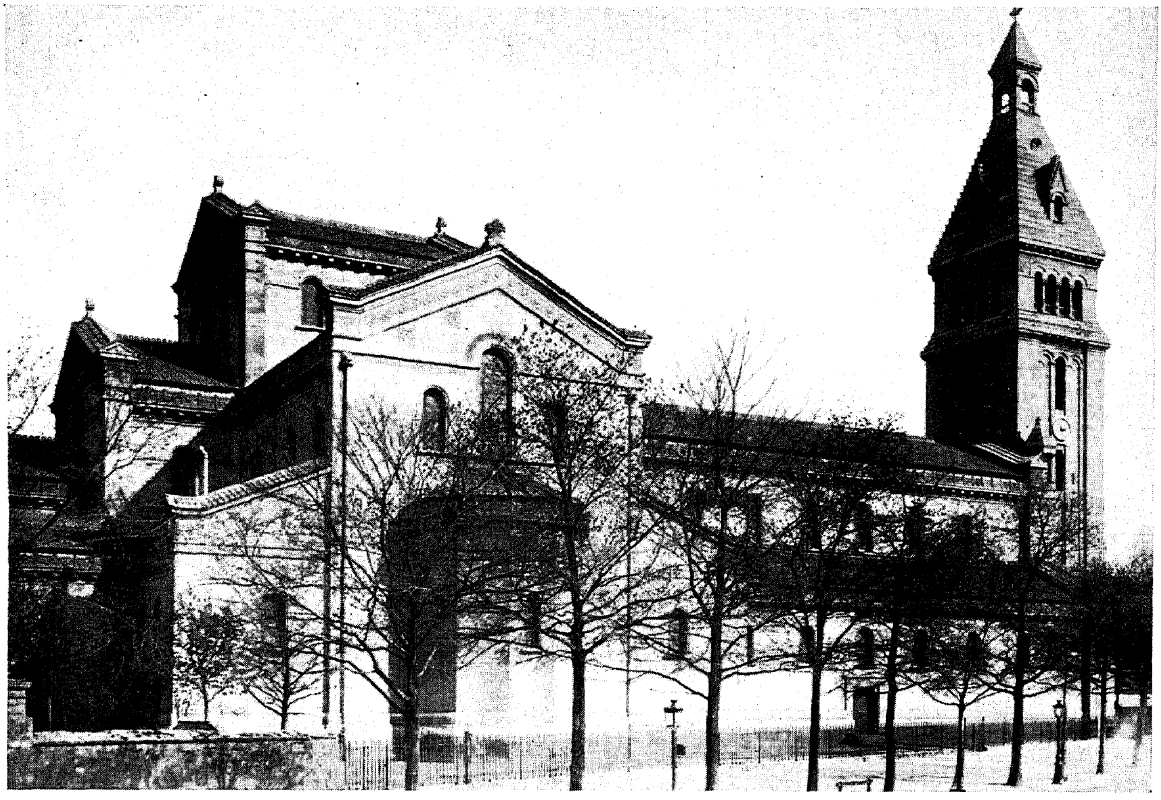
(A) H.-J. Espérandieu: Marseilles, Palais Longchamps, 1862–9



(B) J.-L.-C. Garnier: Paris, Opéra, 1861–74

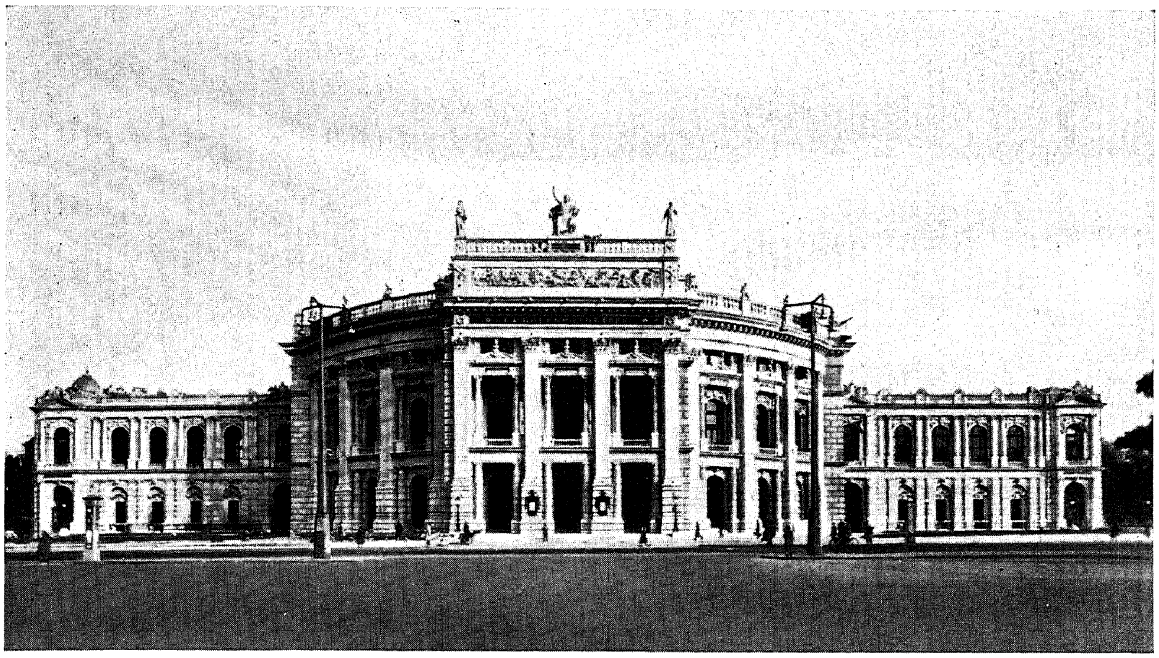
(C) Charles Rohault de Fleury and Henri Blondel: Paris, Place de l'Opéra, 1858–64

J.-L.-C. Garnier: Paris, Opéra, foyer, 1861–74



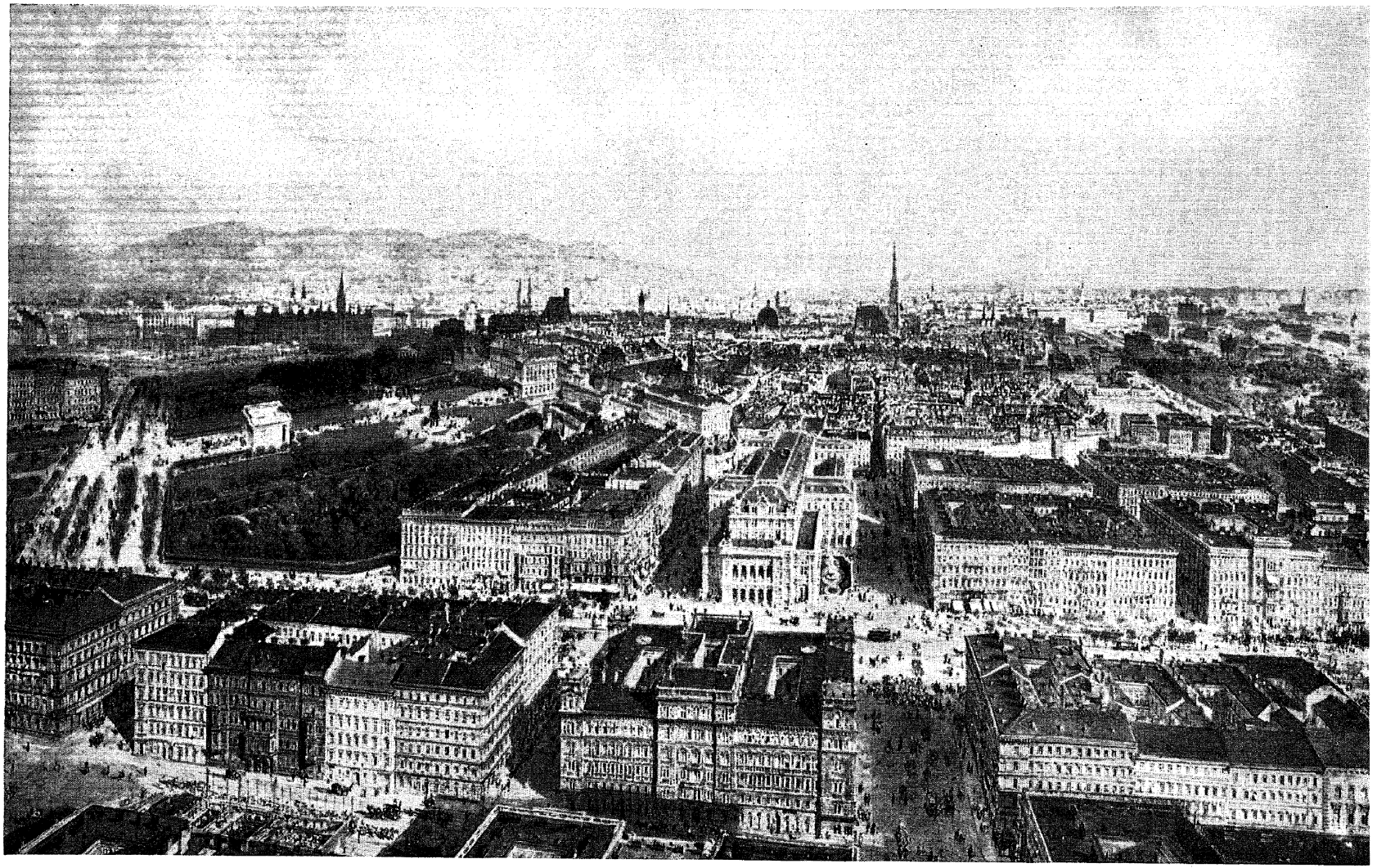
(A) J.-A.-E. Vaudremer: Paris, Saint-Pierre-de-Montrouge, 1864–70

(B) J.-F. Duban: Paris, École des Beaux-Arts, 1860–2

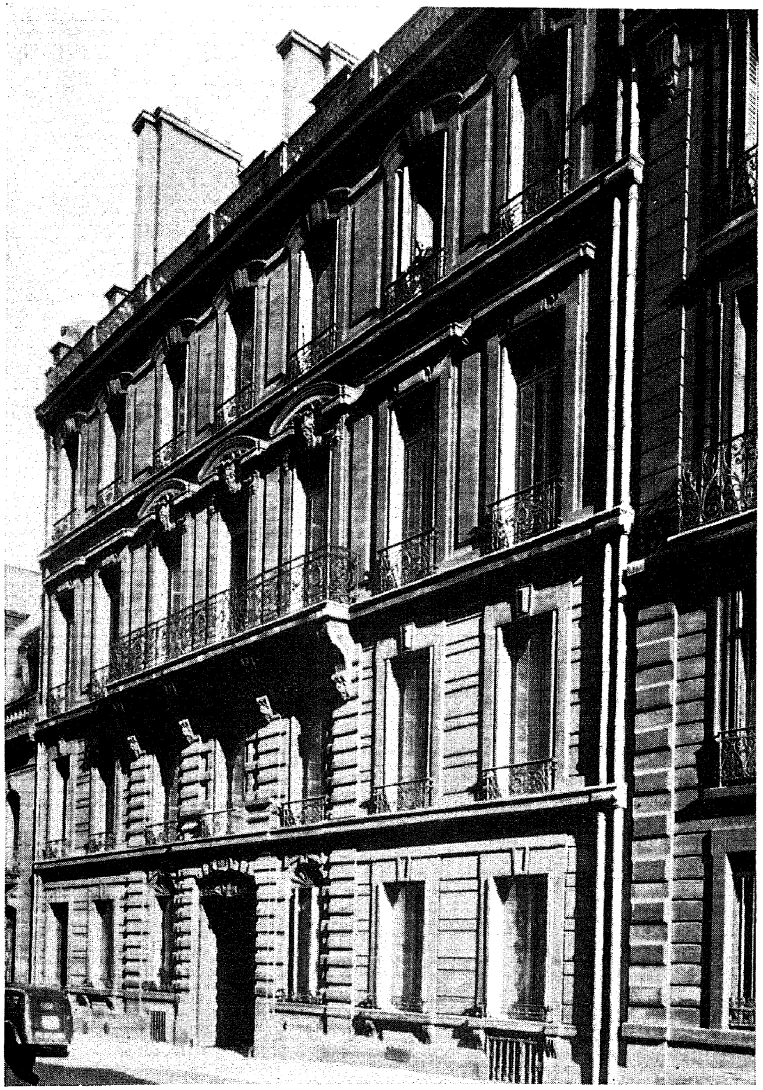


(A) Gottfried Semper and Karl von Hasenauer: Vienna, Burgtheater, 1874–88

(B) Theophil von Hansen: Vienna, Heinrichshof, 1861–3

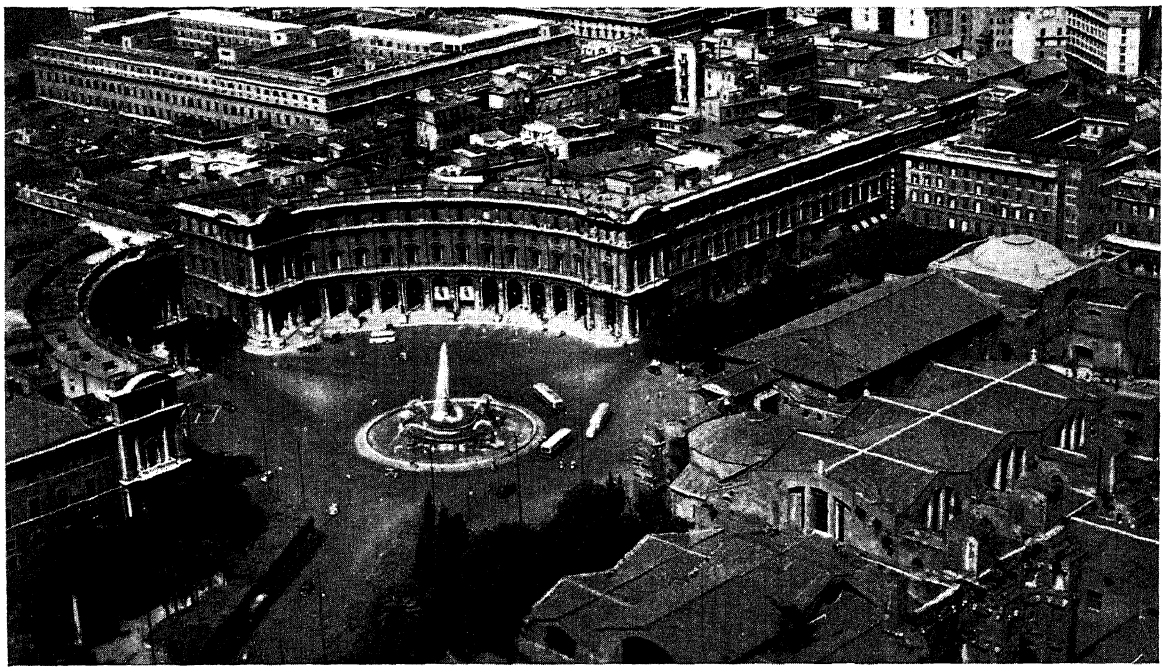


Vienna, Ringstrasse, begun 1858



(A) A.-F. Mortier: Paris, block of flats, 11 Rue de Milan, *c.* 1860

(B) Giuseppe Mengoni: Milan, Galleria Vittorio Emmanuele, 1865–77



(A) Gaetano Koch: Rome, Esedra, 1885

(B) J.-A.-F.-A. Pellechet: Barnard Castle, Co. Durham, Bowes Museum, 1869–75.
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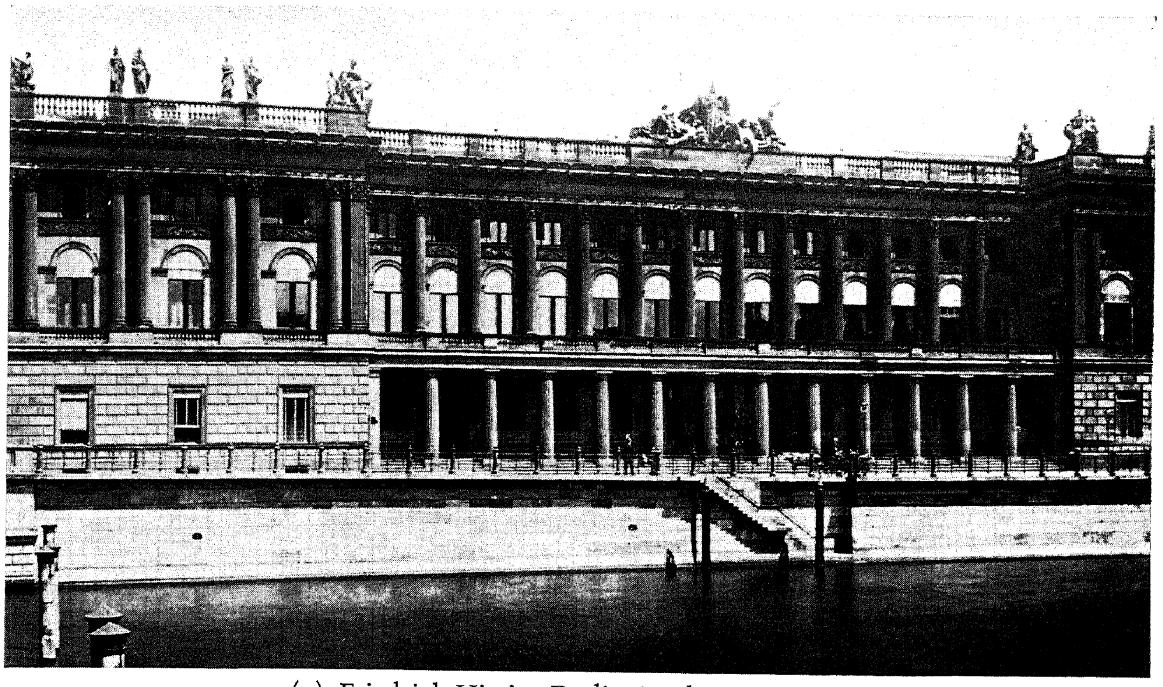
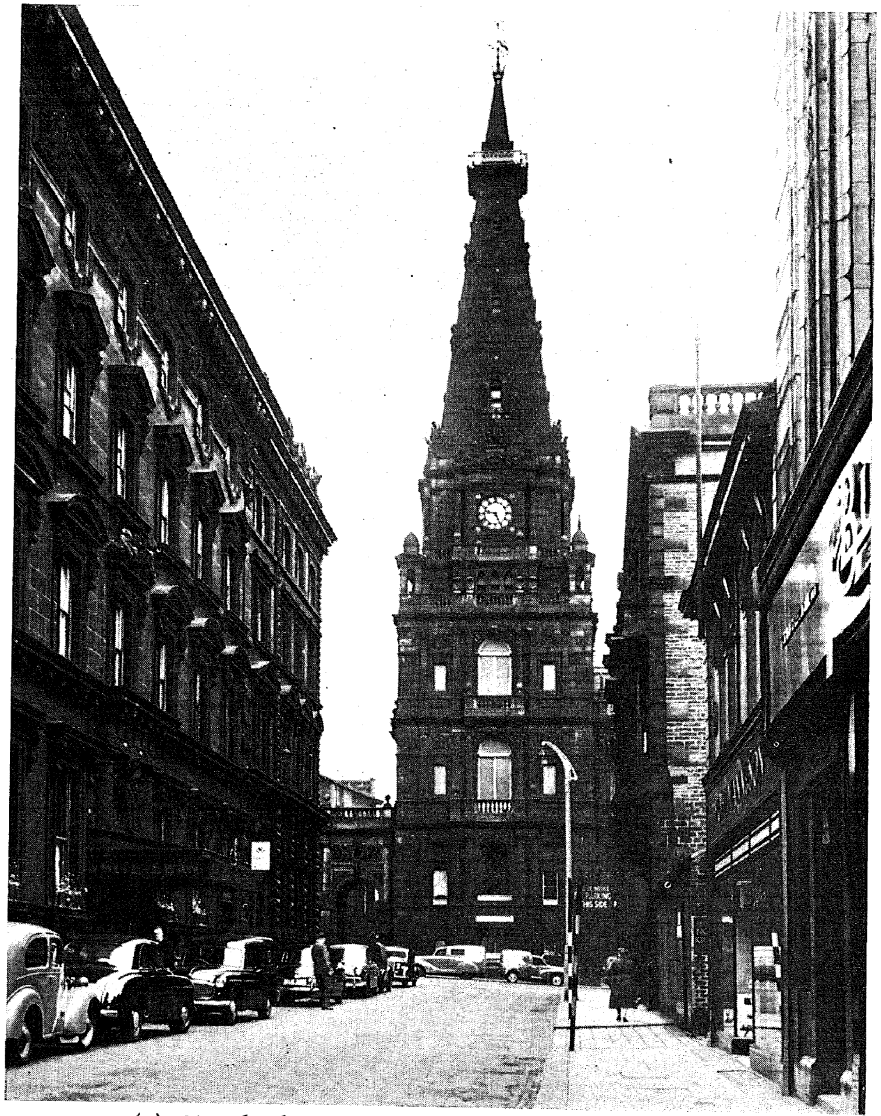


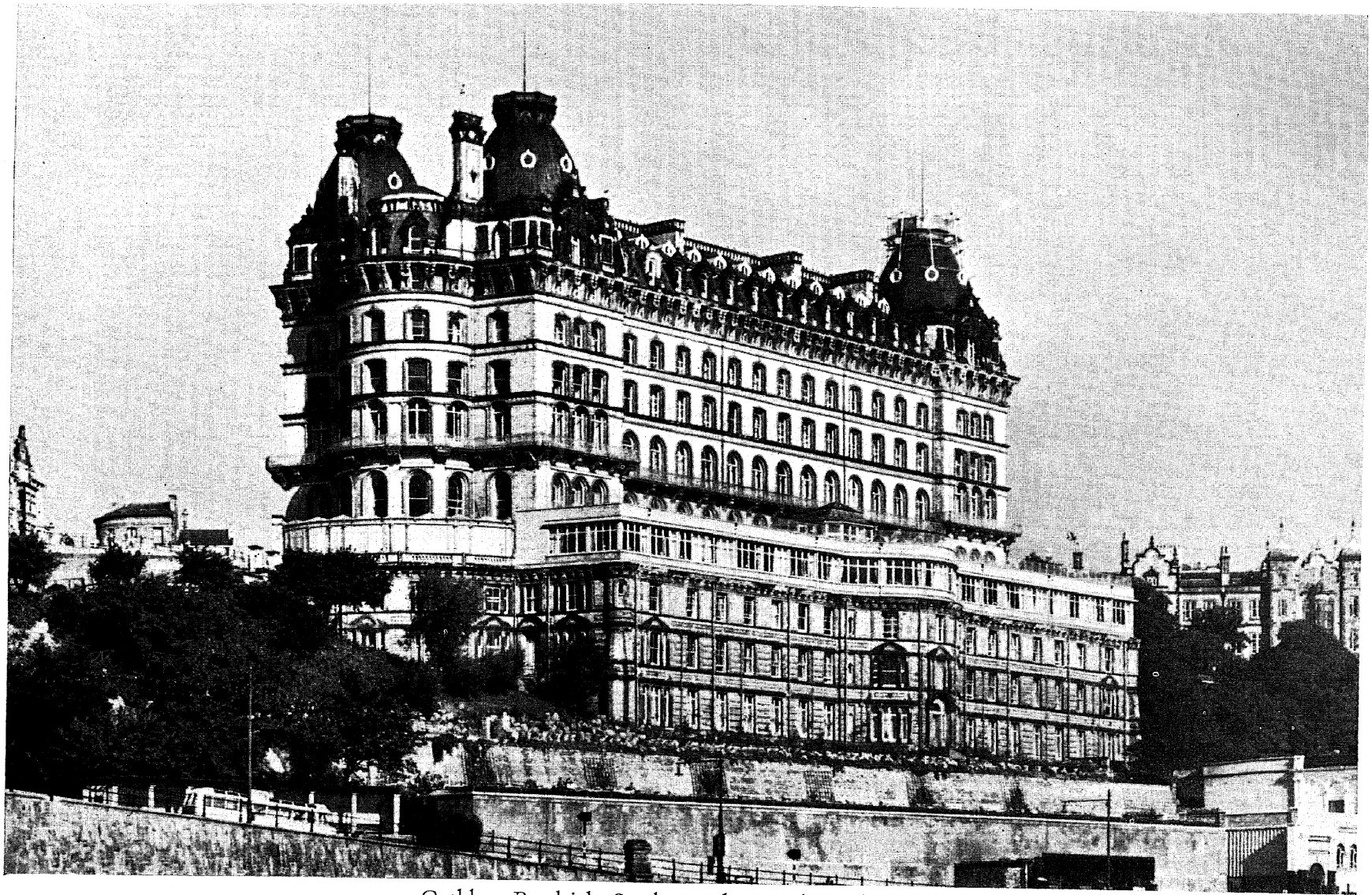
(A) Friedrich Hitzig: Berlin, Exchange, 1859–63

(B) Julius Raschdorf: Cologne, Opera House, 1870–2

(A) Cuthbert Brodrick: Leeds, Town Hall, 1855–9



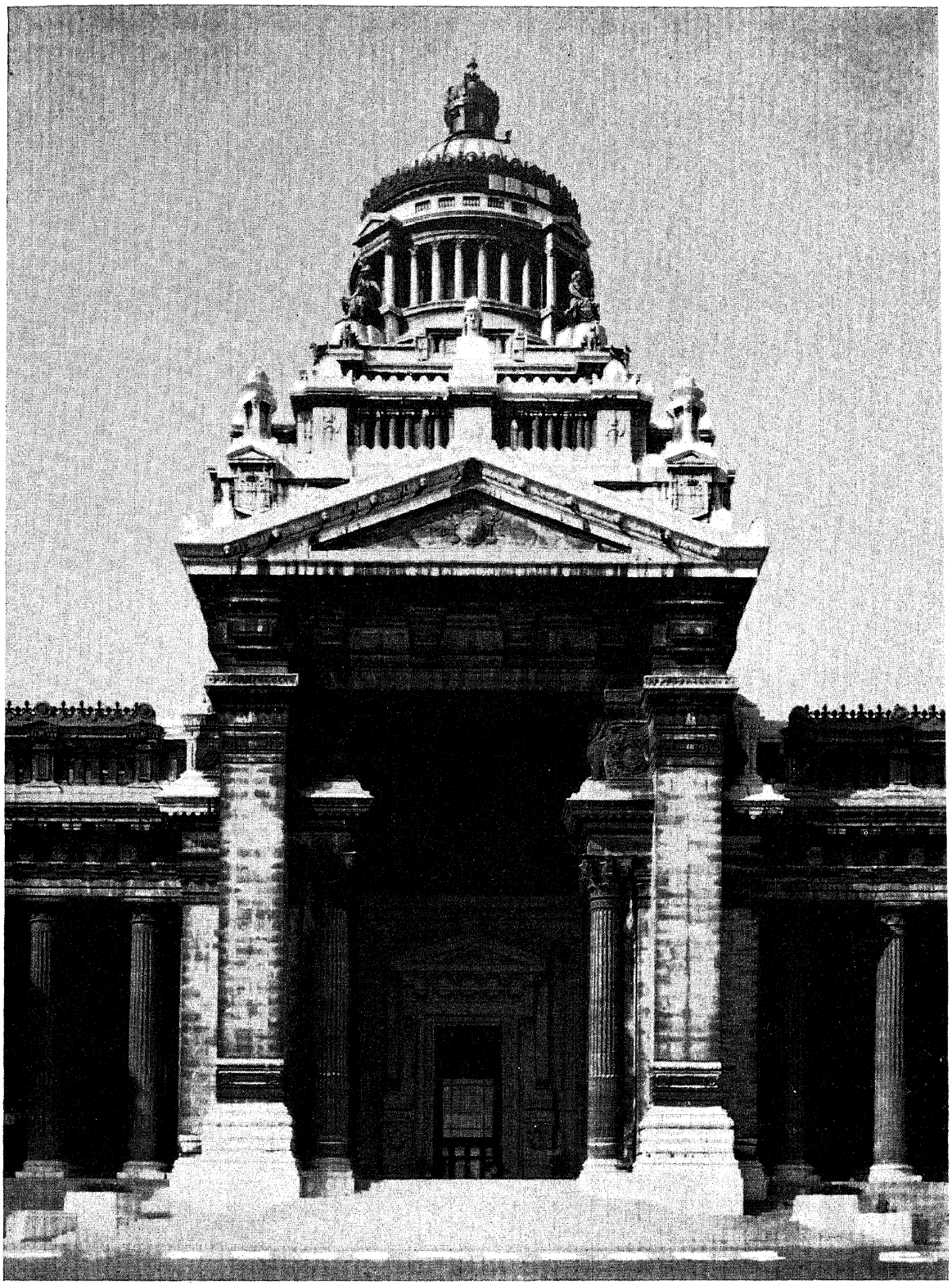
(B) Sir Charles Barry: Halifax, Town Hall, 1860–2



Cuthbert Brodrick: Scarborough, Grand Hotel, 1863–7

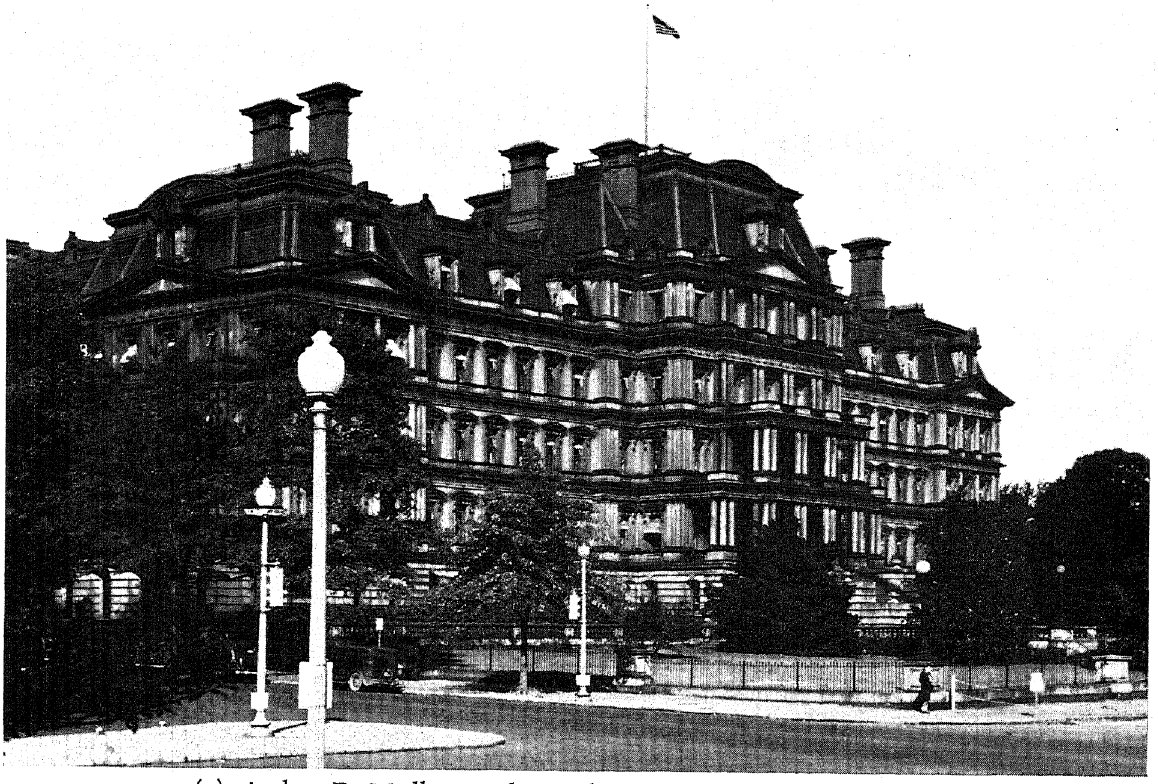
(A) John Giles: London, Langham Hotel, 1864–6

(B) London, 1–5 Grosvenor Place, begun 1867

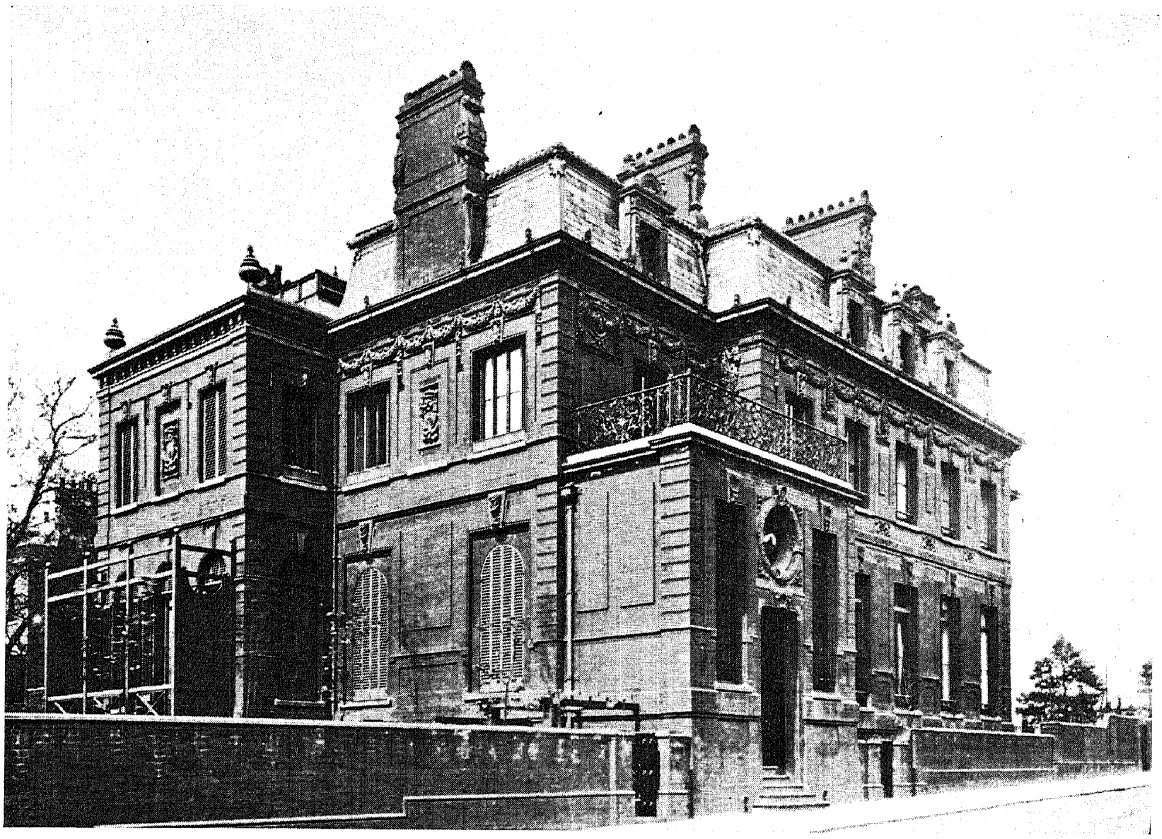


Joseph Poelaert: Brussels, Palace of Justice, 1866–83

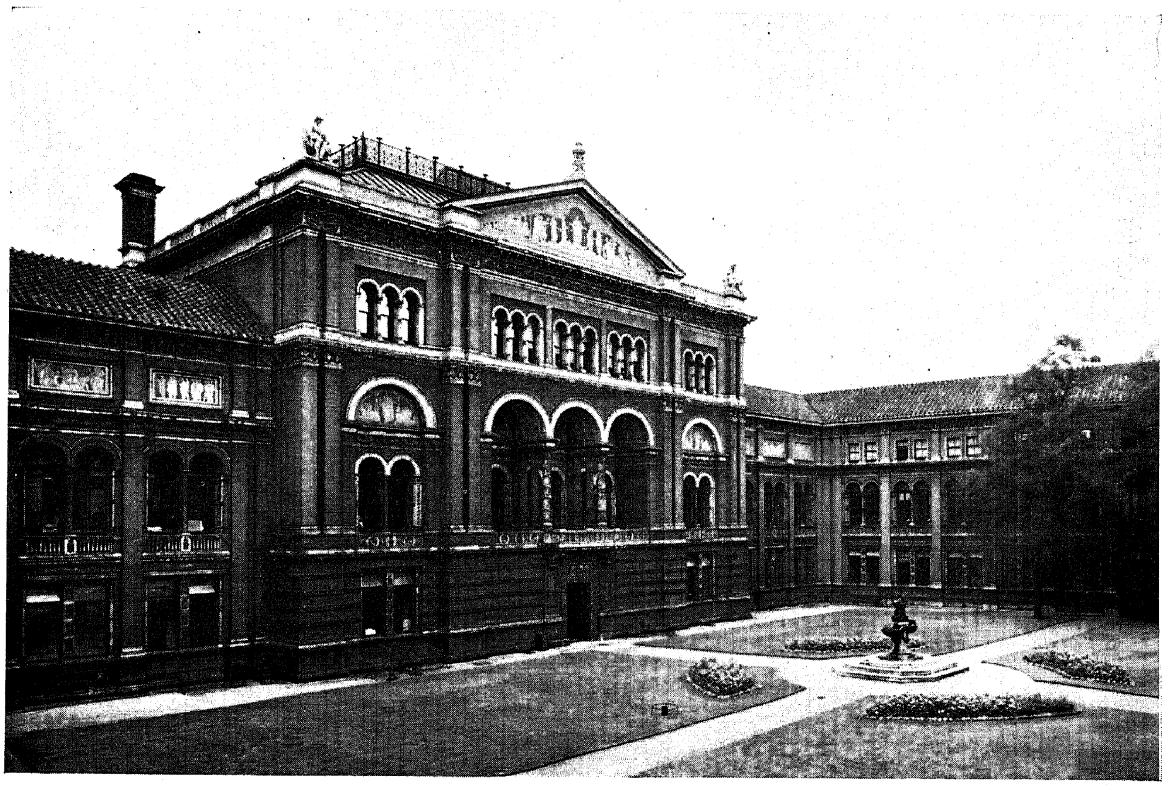
(A) Thomas U. Walter: Washington, Capitol, Wings and Dome, 1851–65; Central Block by William Thornton and others, 1792–1828



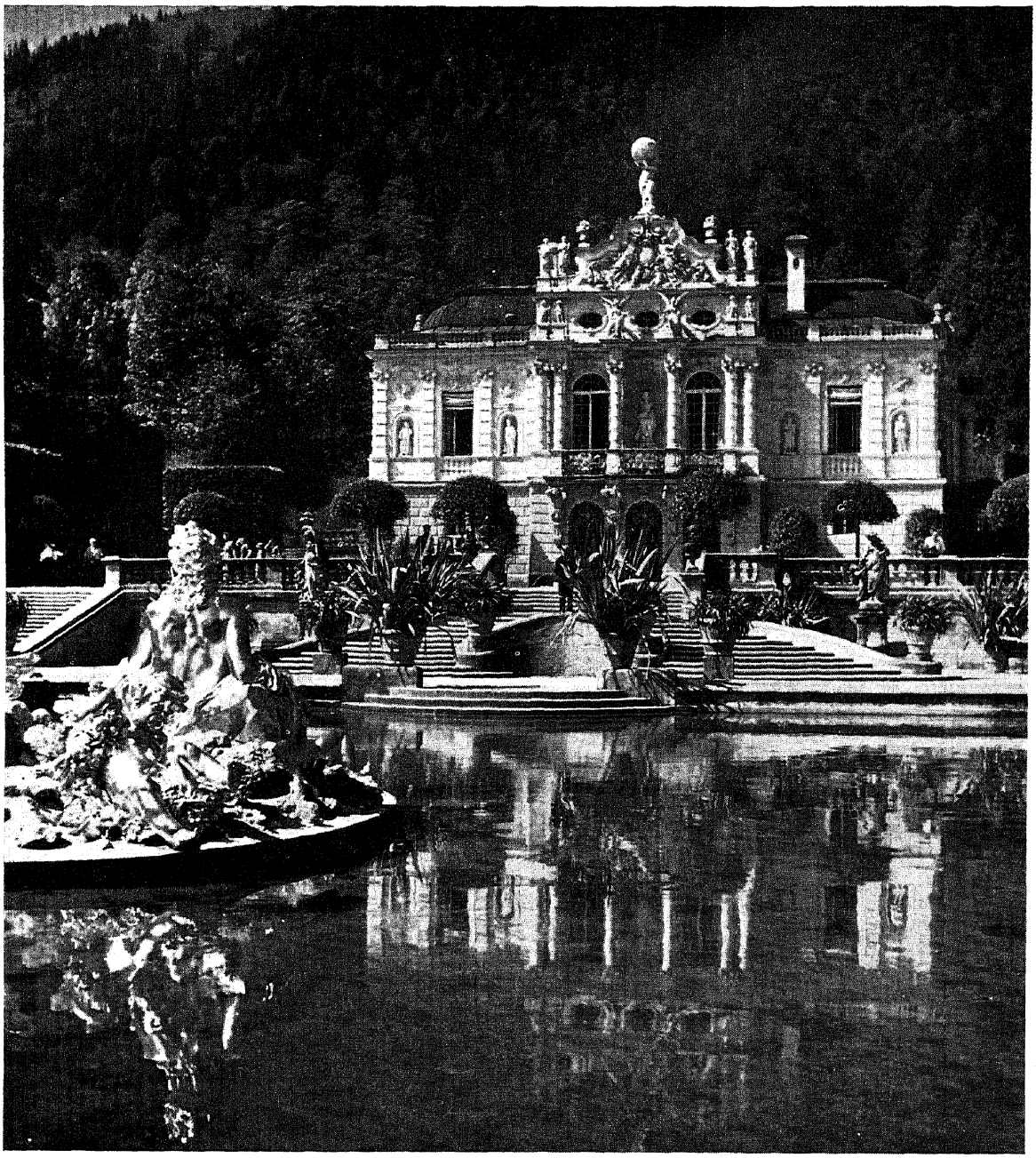
(B) Arthur B. Mullet; Arthur Gilman consultant: Washington, State, War and Navy Department Building, 1871–5



(A) Sir M. D. Wyatt: London, Alford House, 1872

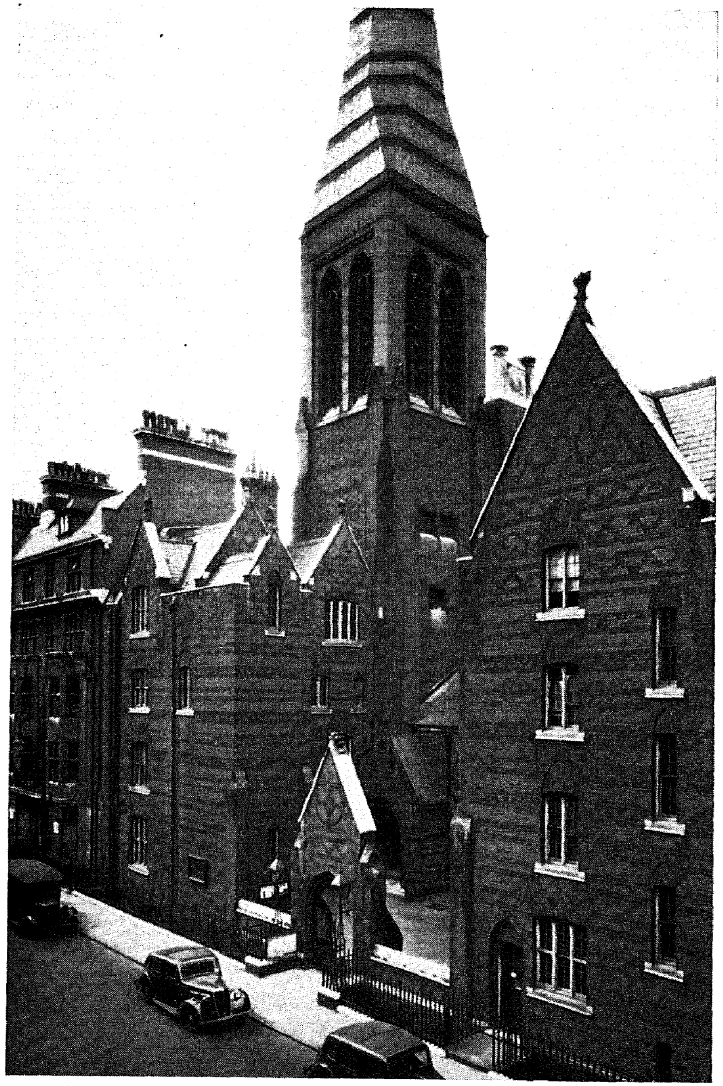


(B) Francis Fowke: London, Victoria and Albert Museum, Court, begun 1866

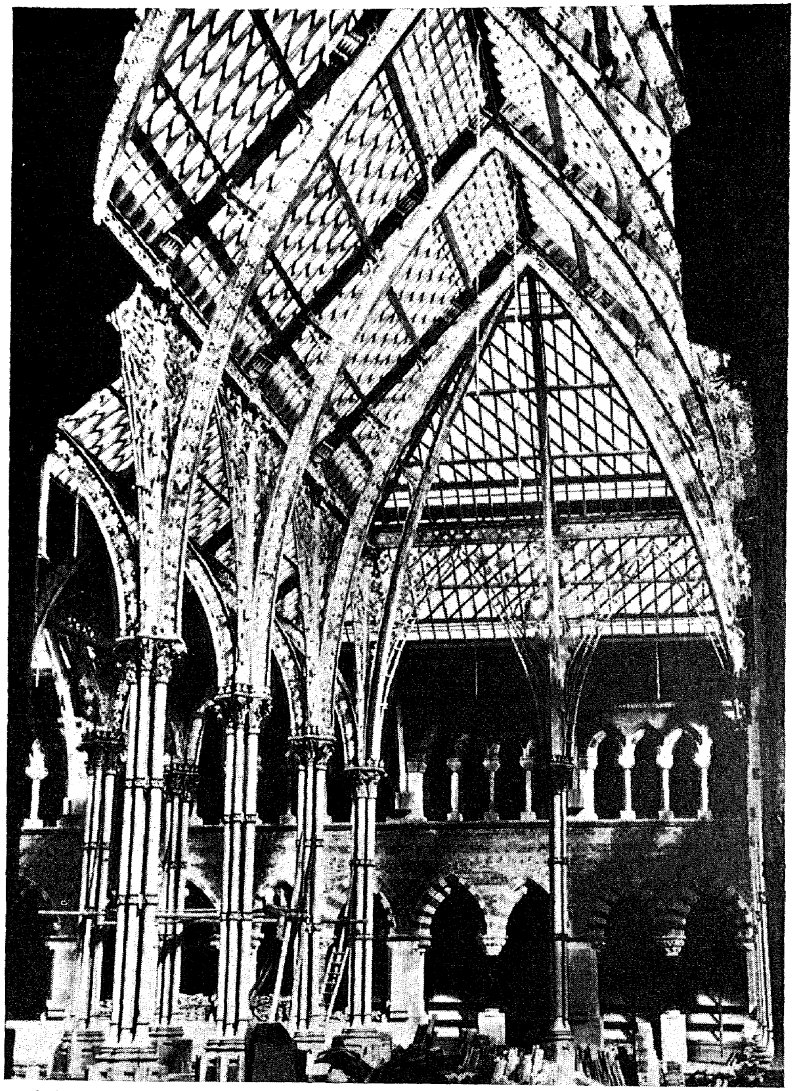


Georg von Dollmann: Schloss Linderhof, near Oberammergau, 1870–86

William Butterfield: London, All Saints', Margaret Street, interior, 1849–59

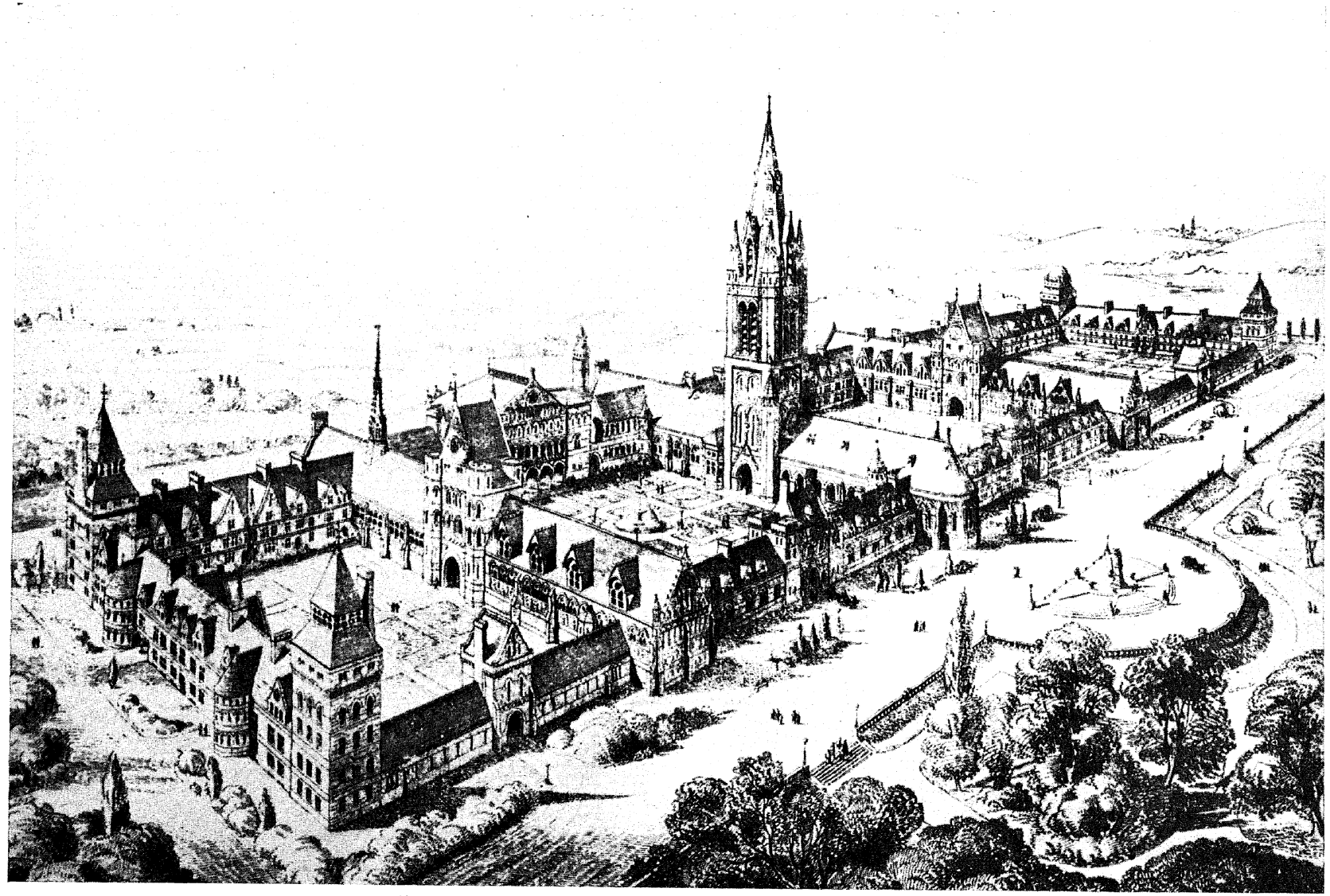


(A) William Butterfield: London, All Saints', Margaret Street, Schools and Clergy House, 1849–59

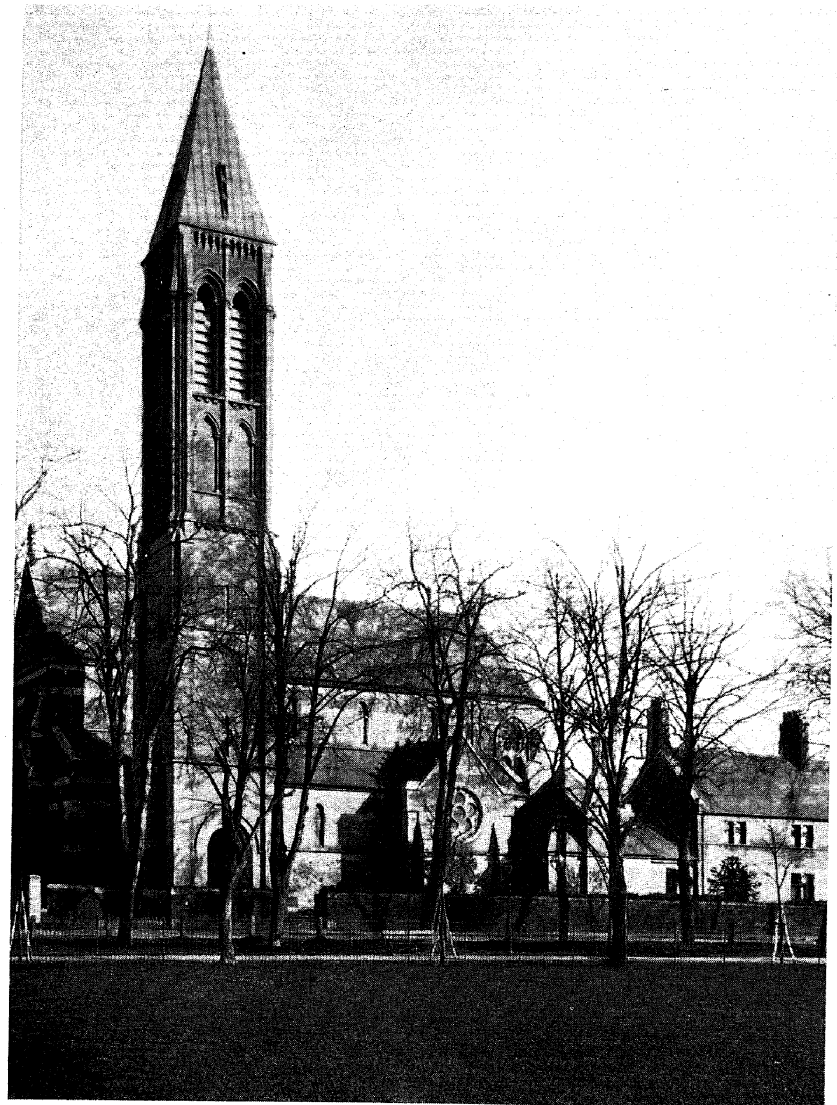


(B) Deane & Woodward: Oxford, University Museum, 1855–9

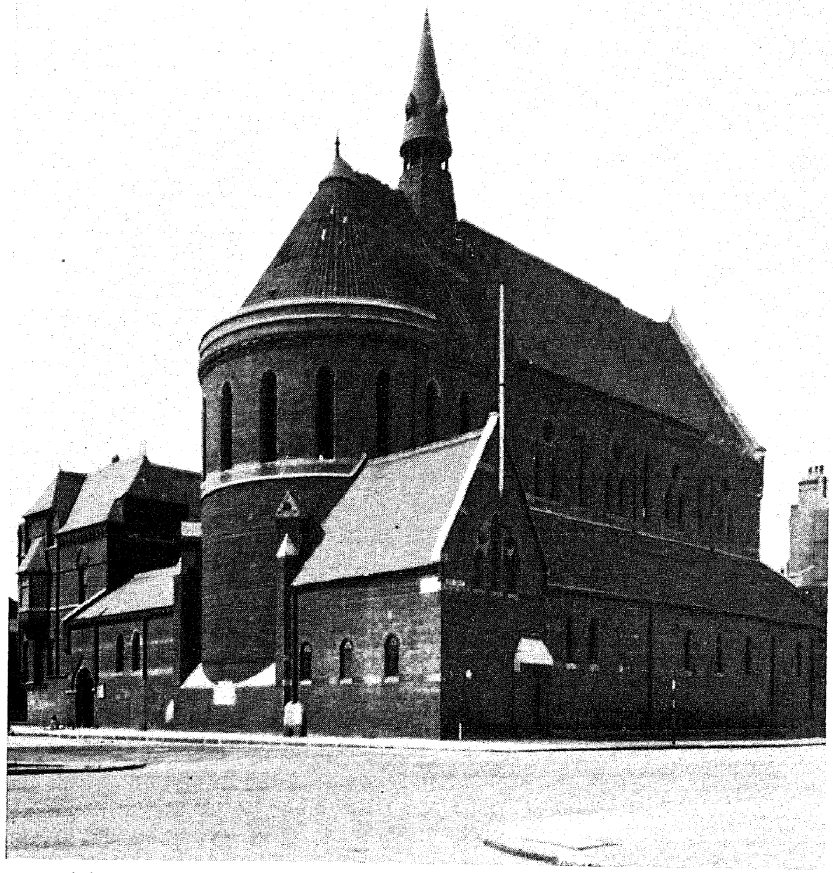
William Butterfield: Baldersby St James, Yorkshire, St James's, 1856



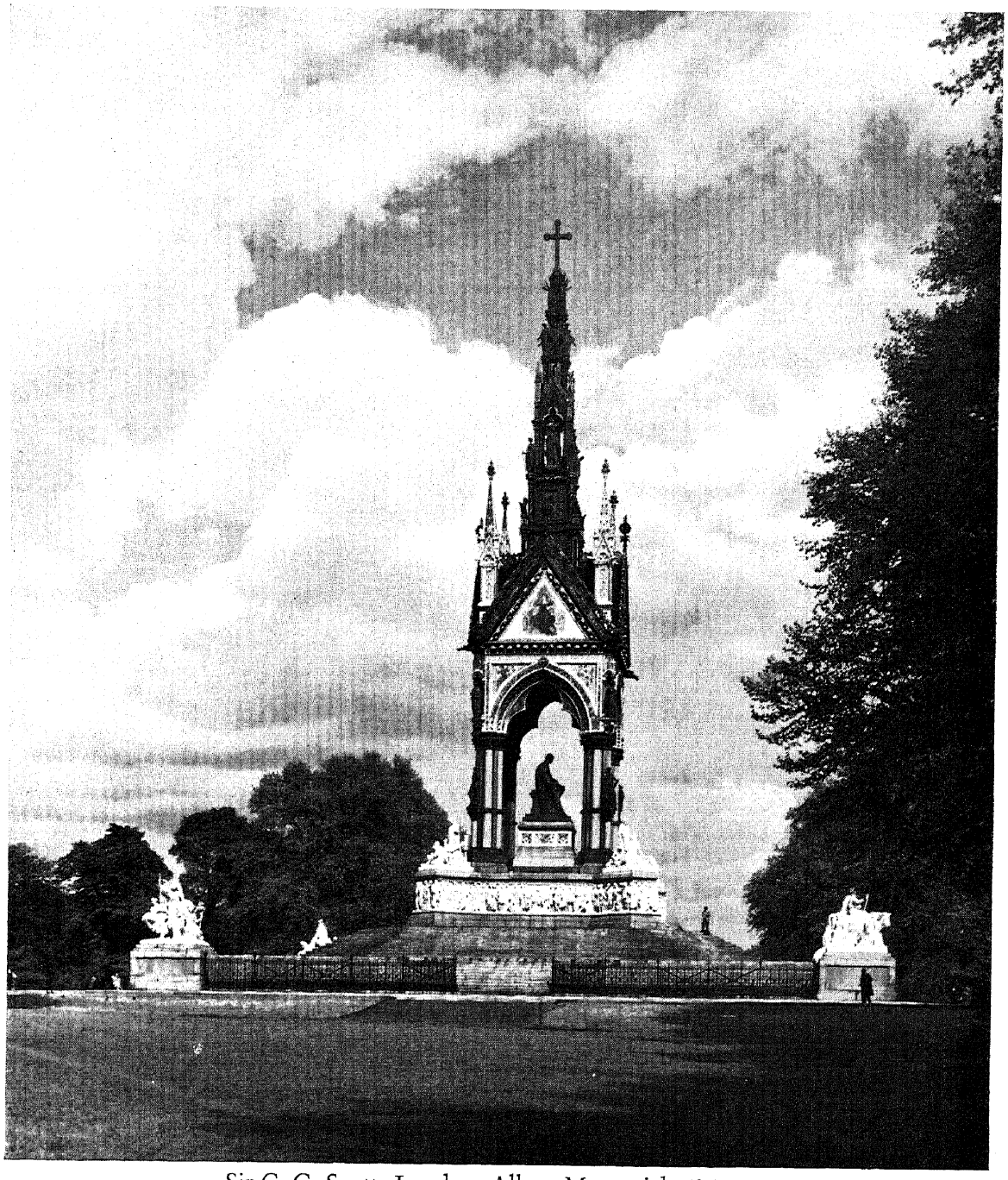
William Burges: Hartford, Conn., Trinity College, 1873–80



(A) Henry Clutton: Leamington, Warwickshire, St Peter's, 1861–5

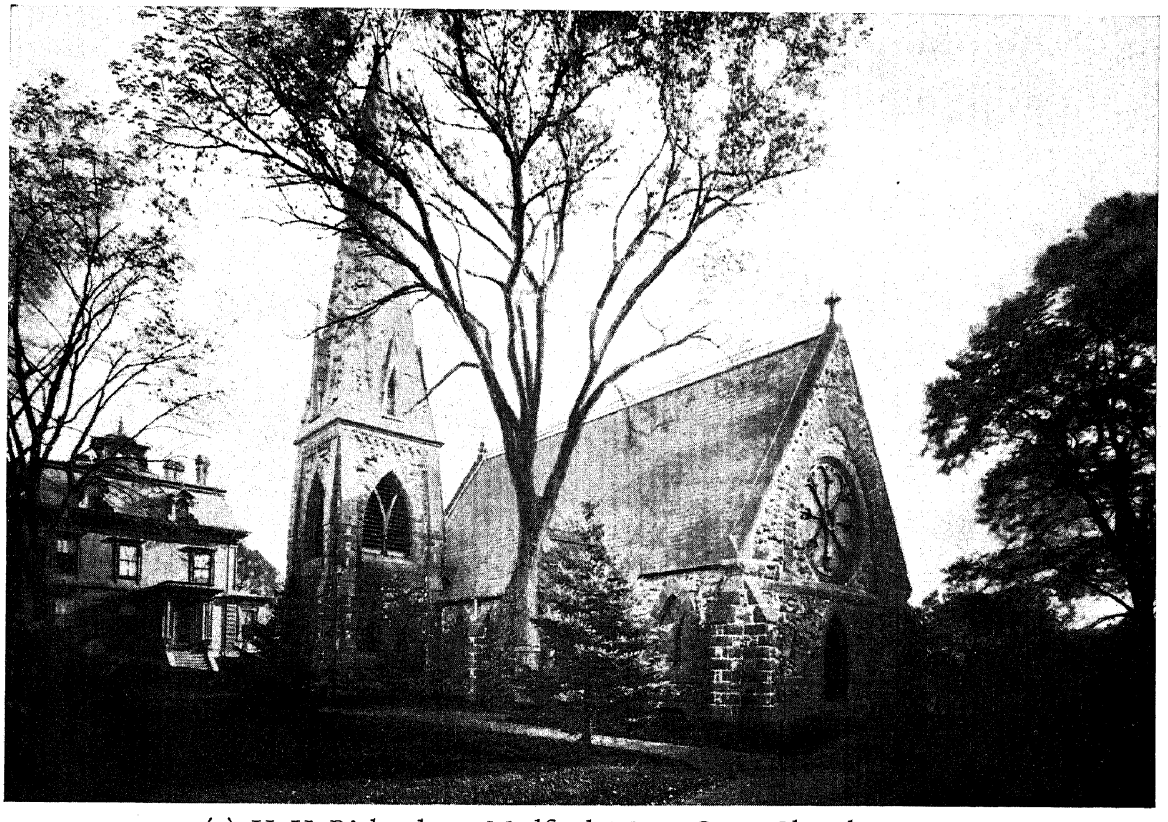


(B) James Brooks: London, St Saviour's, Hoxton, 1865–7

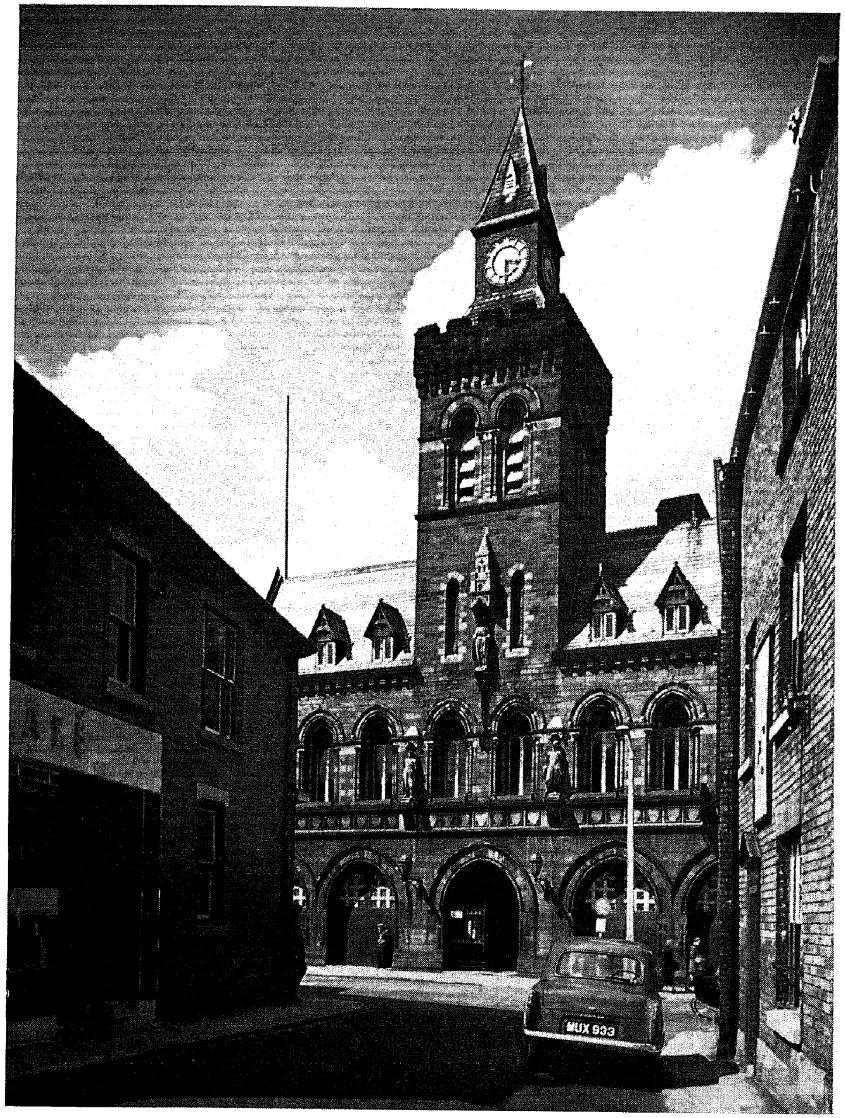


Sir G. G. Scott: London, Albert Memorial, 1863–72

(A) J. P. Seddon: Aberystwyth, University College, begun 1864

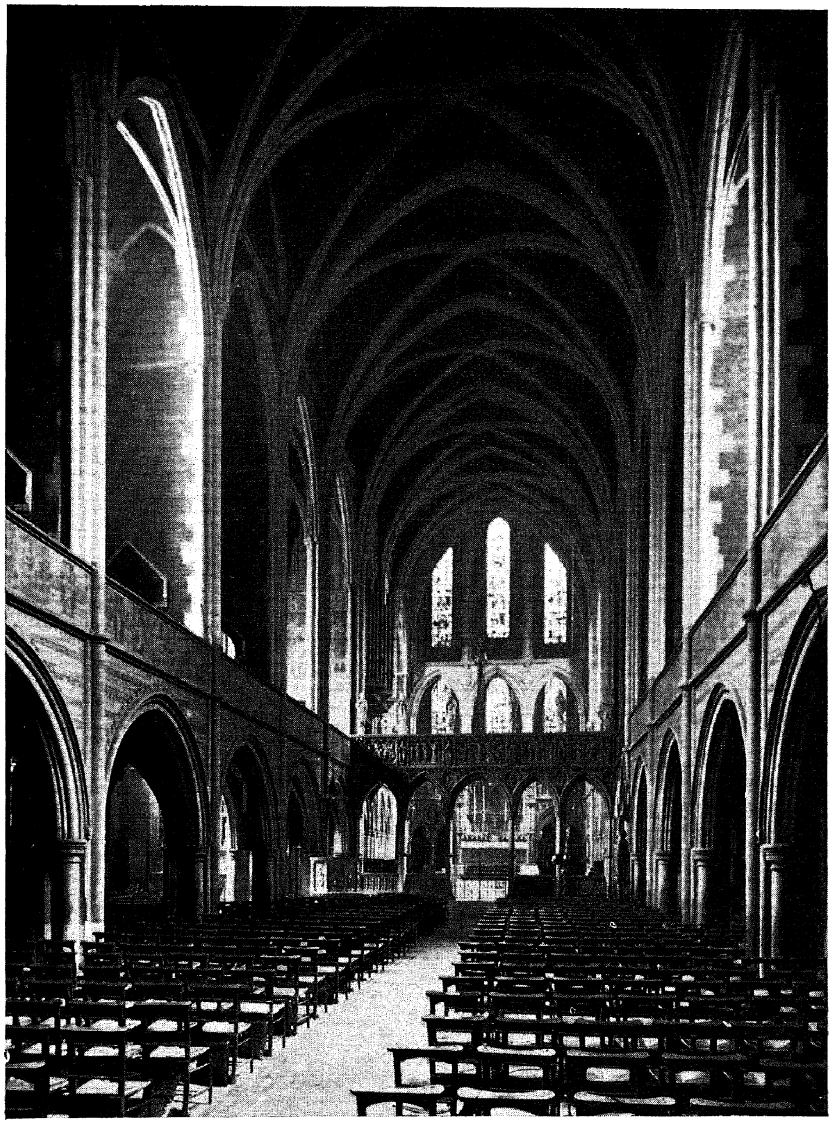


(B) H. H. Richardson: Medford, Mass., Grace Church, 1867–8

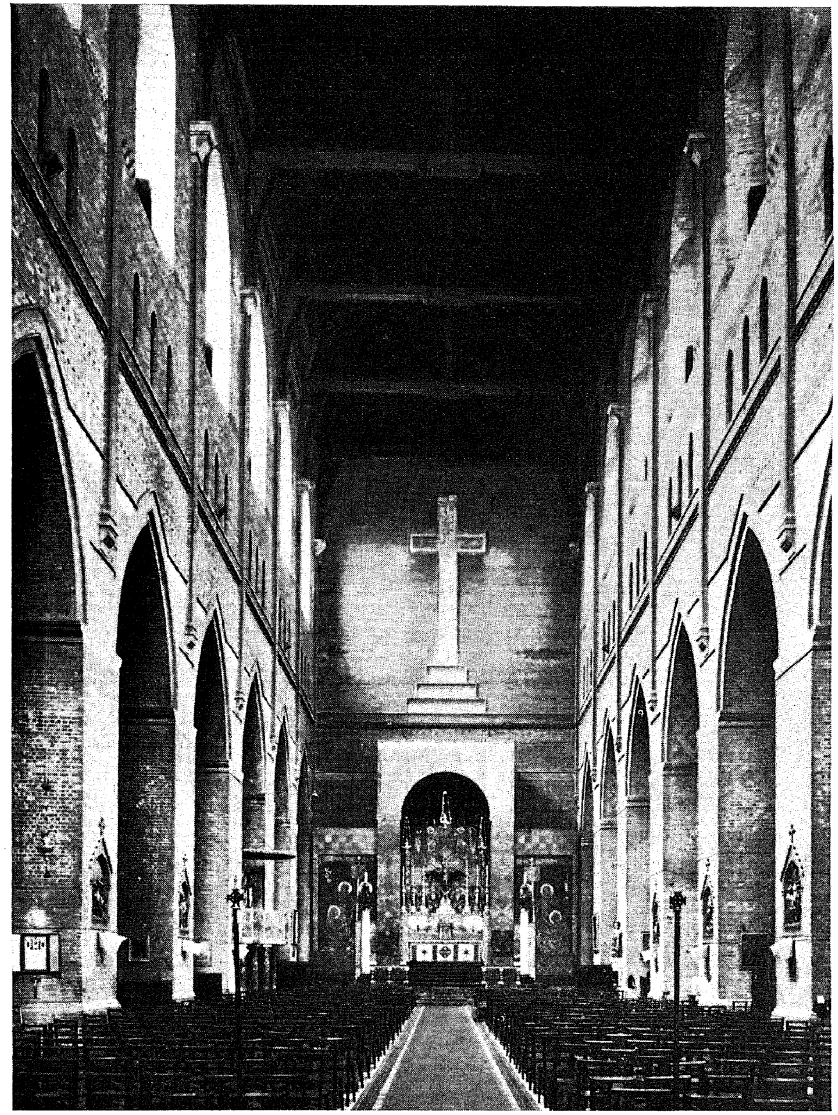


(A) E. W. Godwin: Congleton, Cheshire, Town Hall, 1864–7

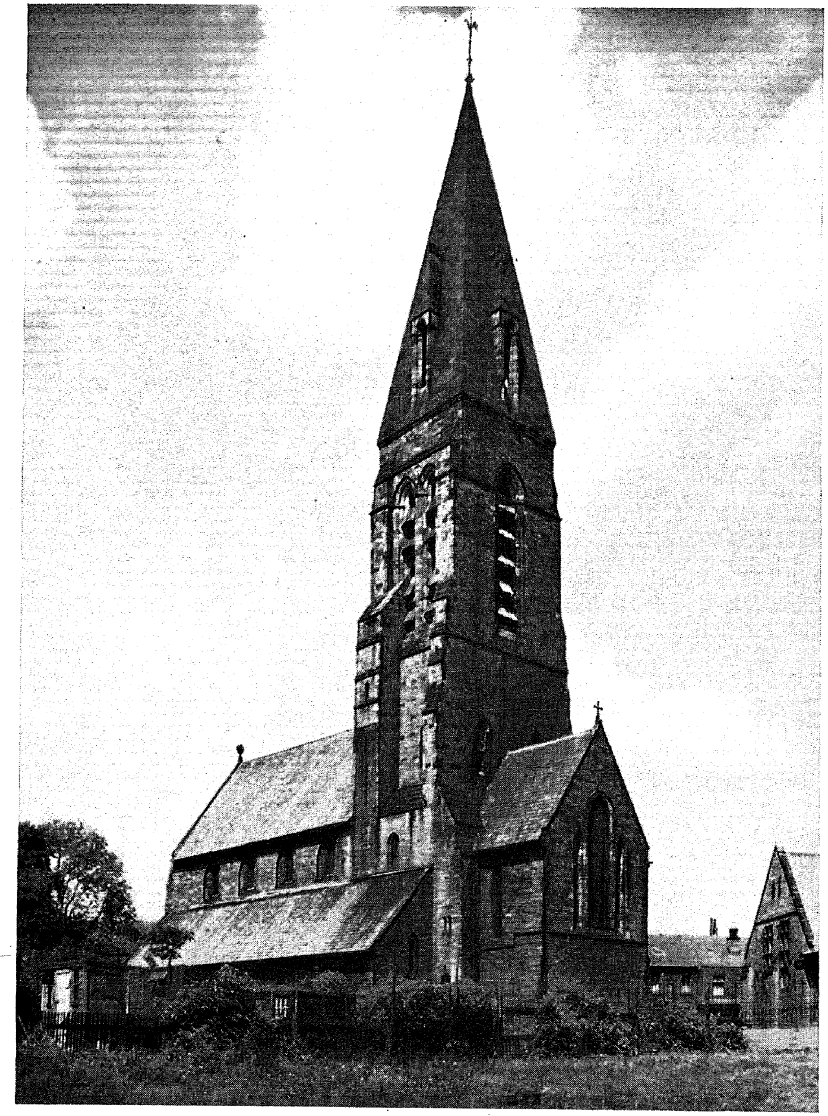
(B) G. F. Bodley: Pendlebury, Lancashire, St Augustine's, 1870–4



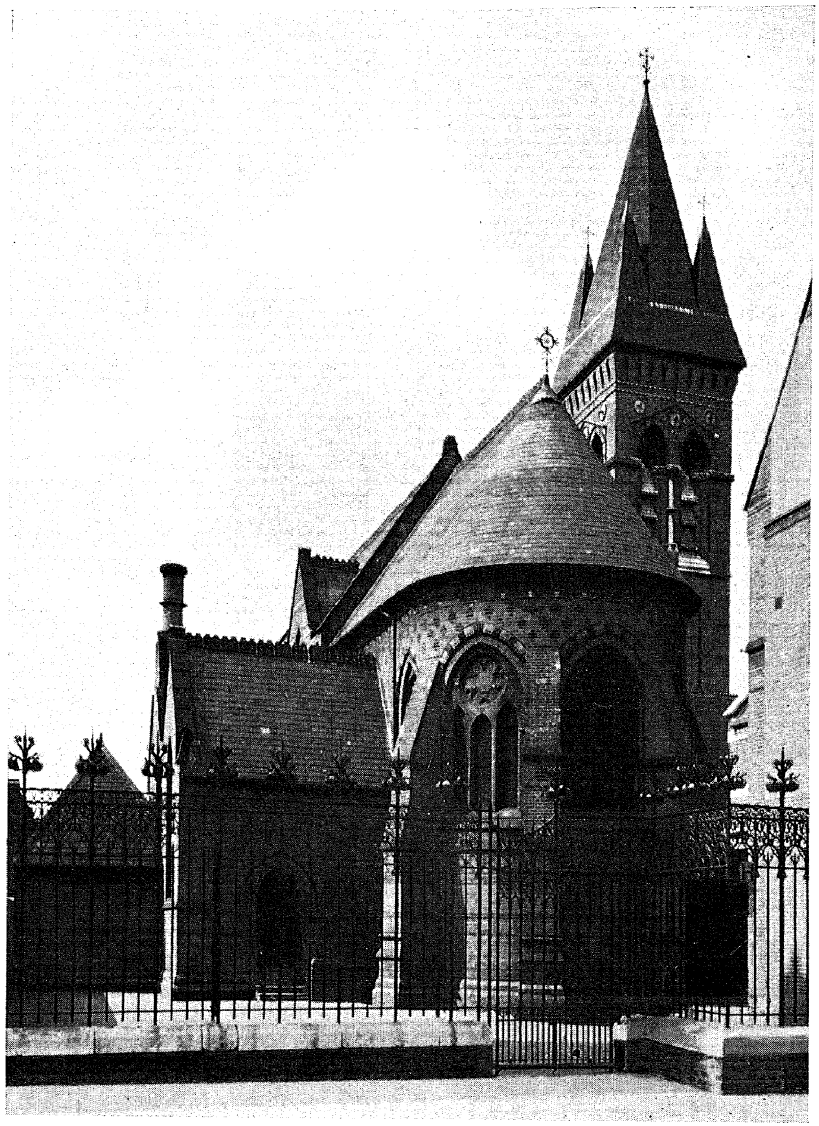
(A) J. L. Pearson: London, St Augustine's, Kilburn, 1870–80



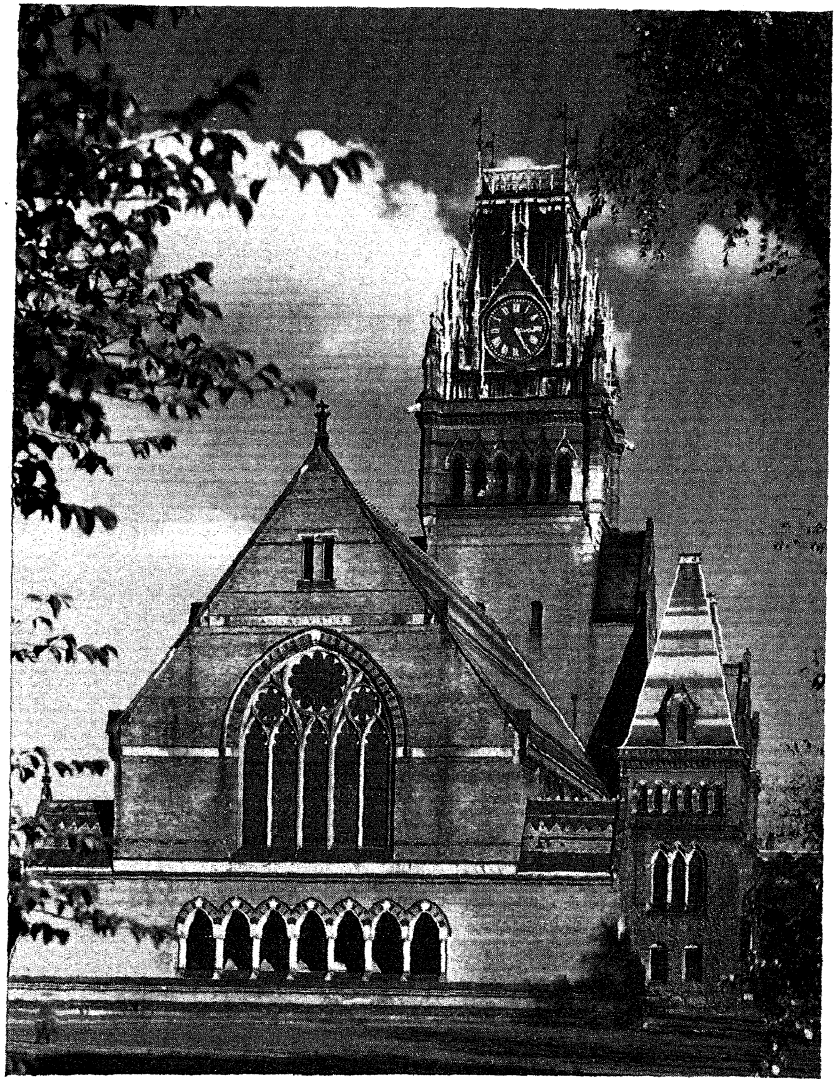
(B) Edmund E. Scott: Brighton, St Bartholomew's, completed 1875



(A) R. Norman Shaw: Bingley, Yorkshire, Holy Trinity, 1866–7

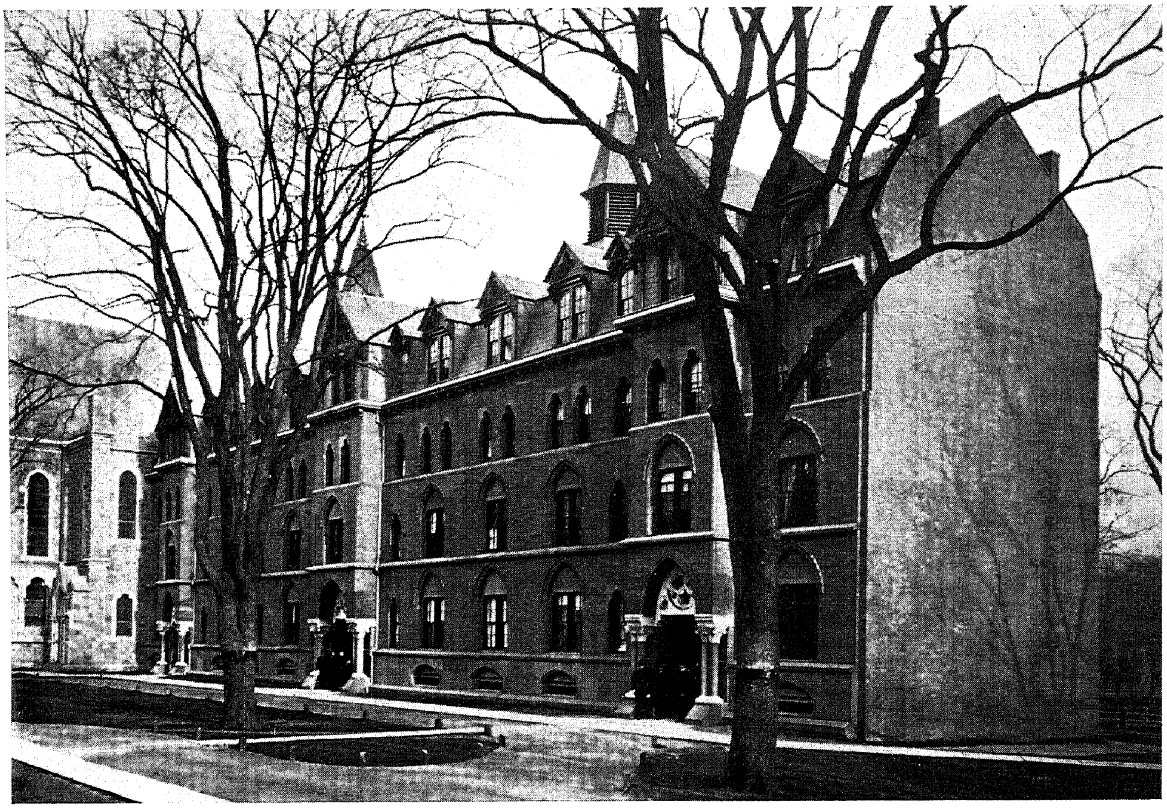


(B) G. E. Street: London, St James the Less, Thorndike Street, 1858–61

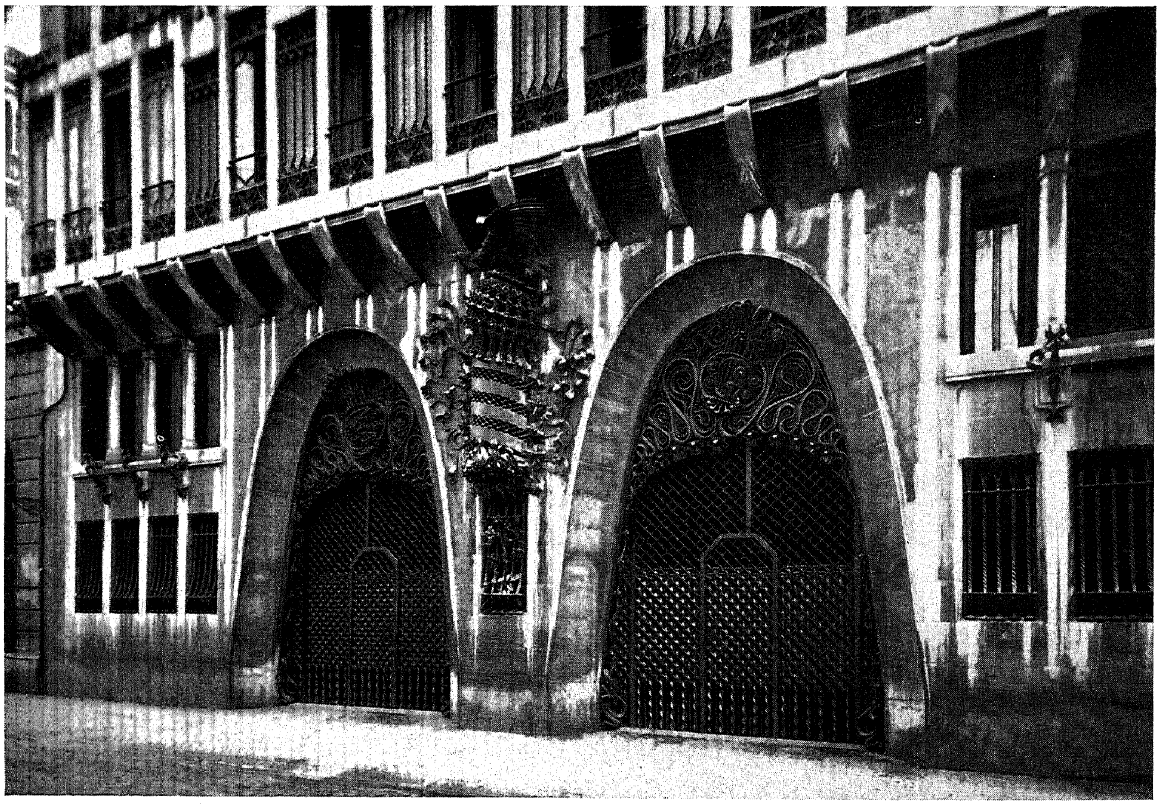


(A) Ware & Van Brunt: Cambridge, Mass., Memorial Hall, 1870–8

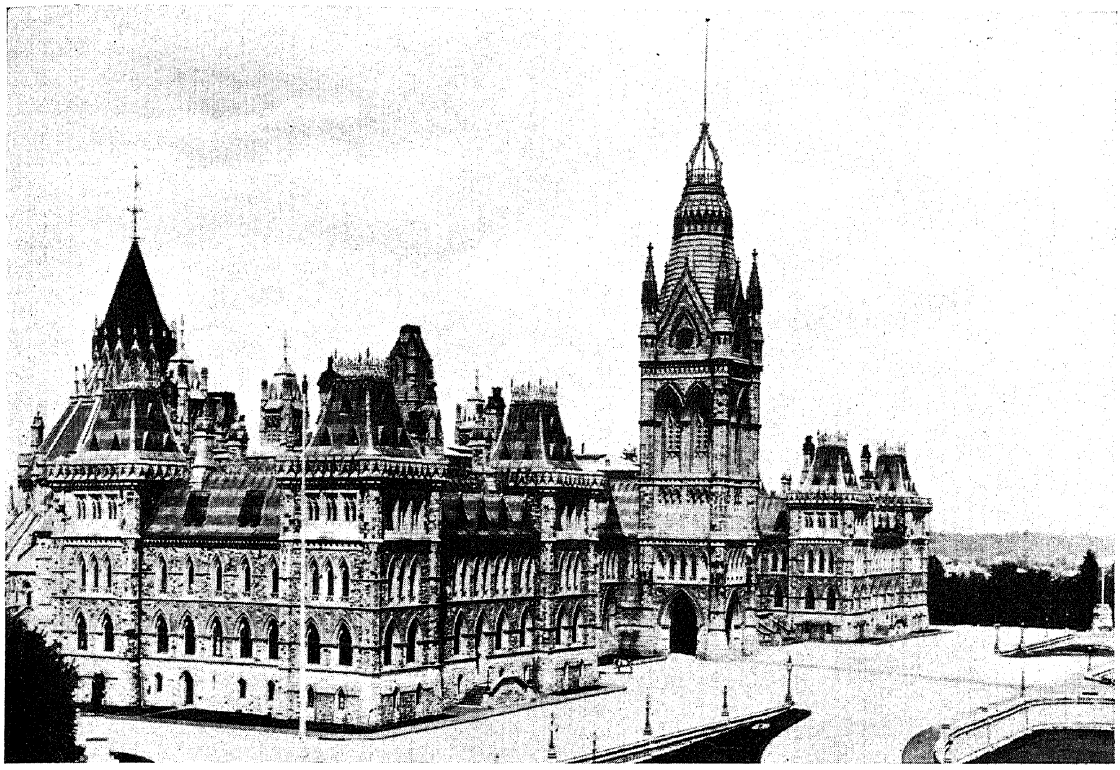
(B) Frank Furness: Philadelphia, Provident Life and Trust Company, 1879



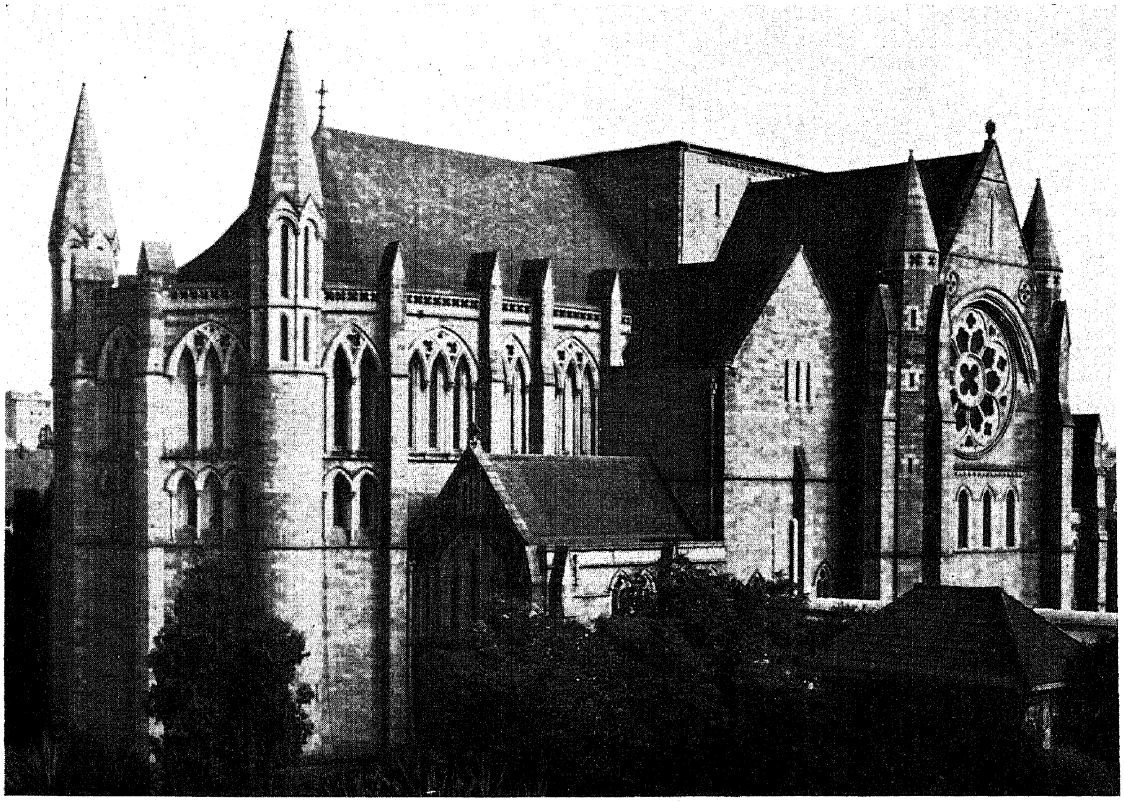
(A) Russell Sturgis: New Haven, Conn., Yale College, Farnam Hall, 1869–70



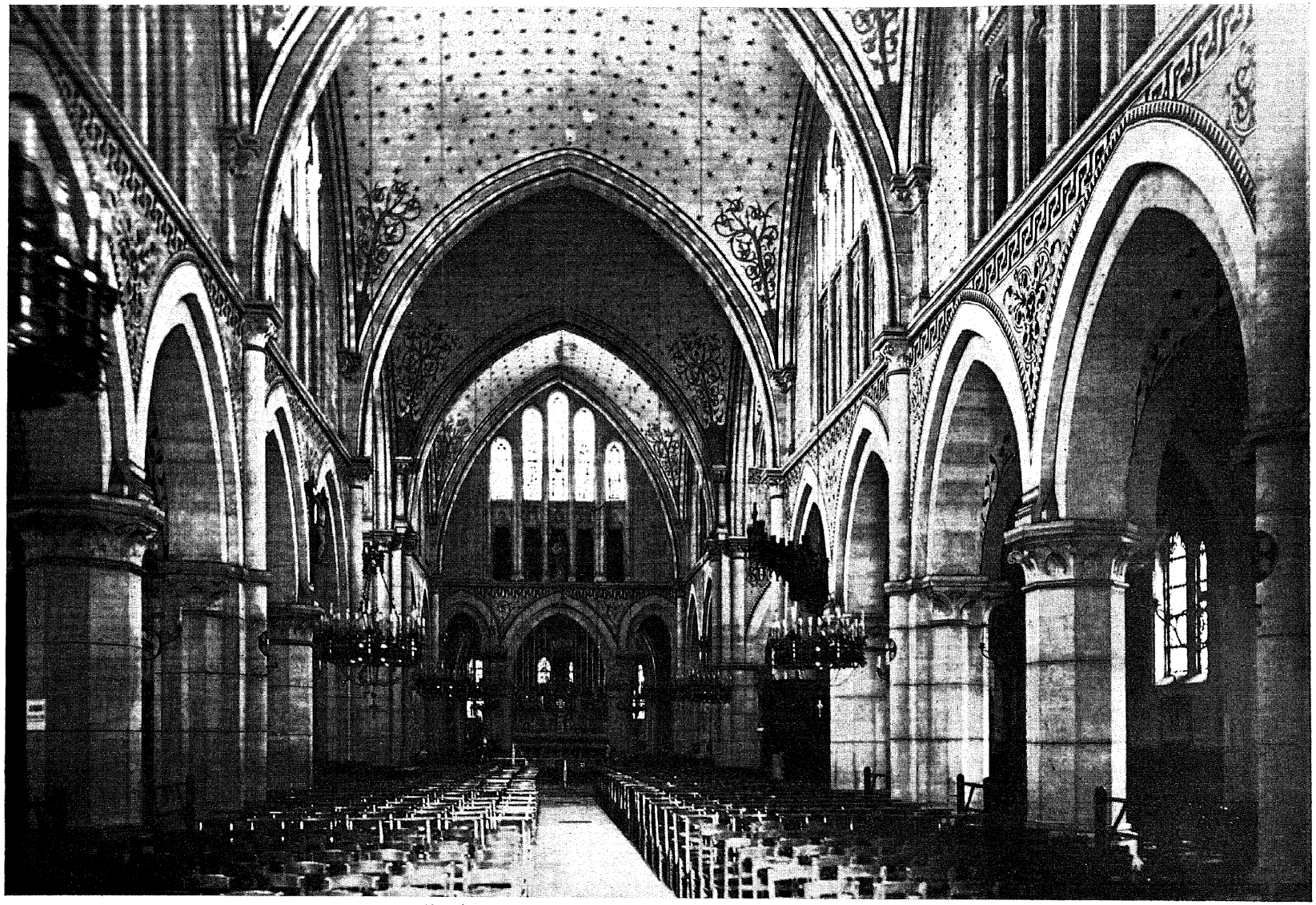
(B) Antoni Gaudí: Barcelona, Palau Güell, 1885–9



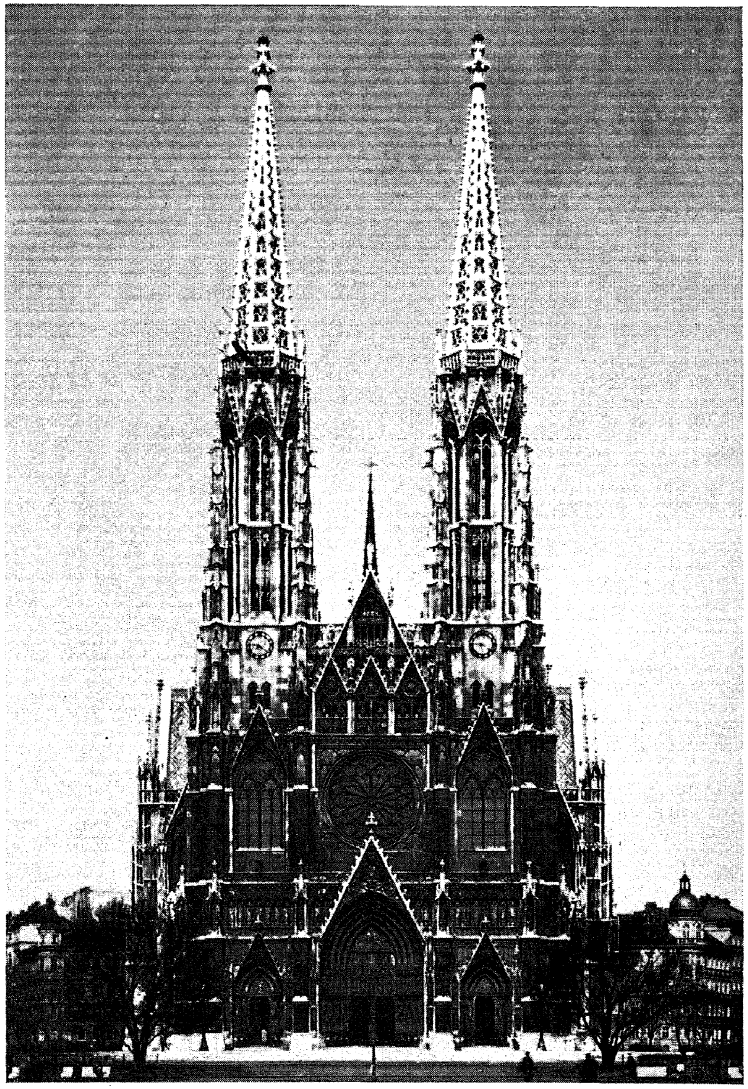
(A) Fuller & Jones: Ottawa, Canada, Parliament House, 1859–67



(B) J. L. Pearson and F. L. Pearson: Brisbane, St John's Cathedral, begun 1901

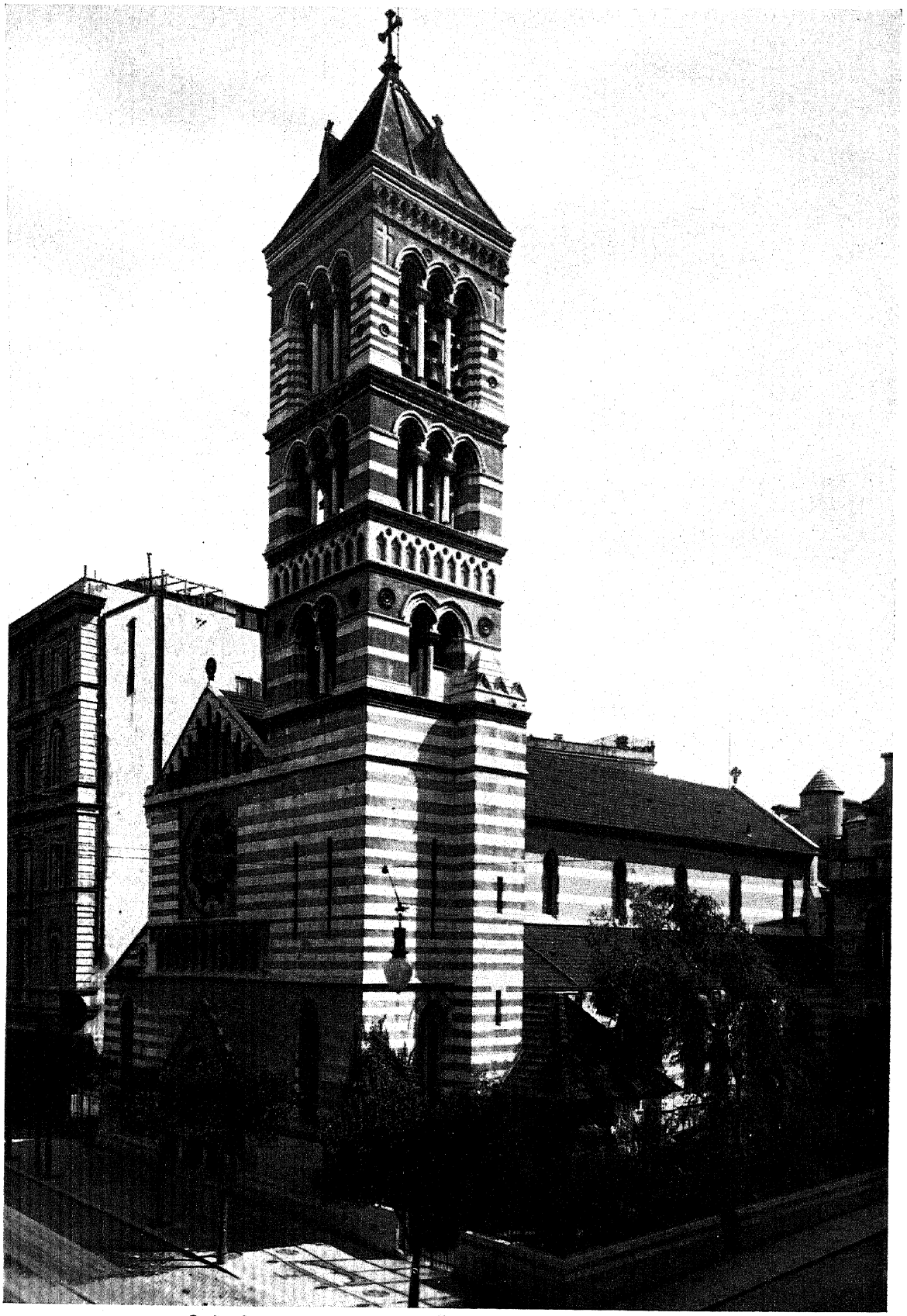


E.-E. Viollet-le-Duc: St Denis, Seine, Saint-Denys-de-l'Estrée, 1864–7



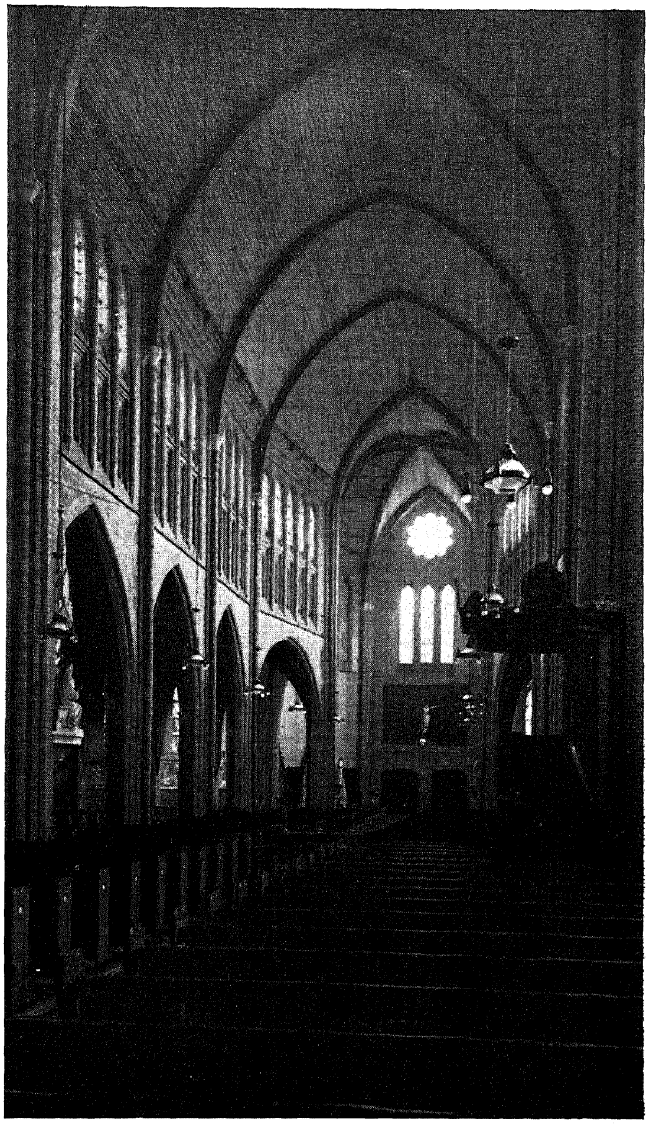
(A) Heinrich von Ferstel: Vienna, Votivkirche, 1856–79

(B) Friedrich von Schmidt: Vienna, Fünfhaus Parish Church, 1868–75

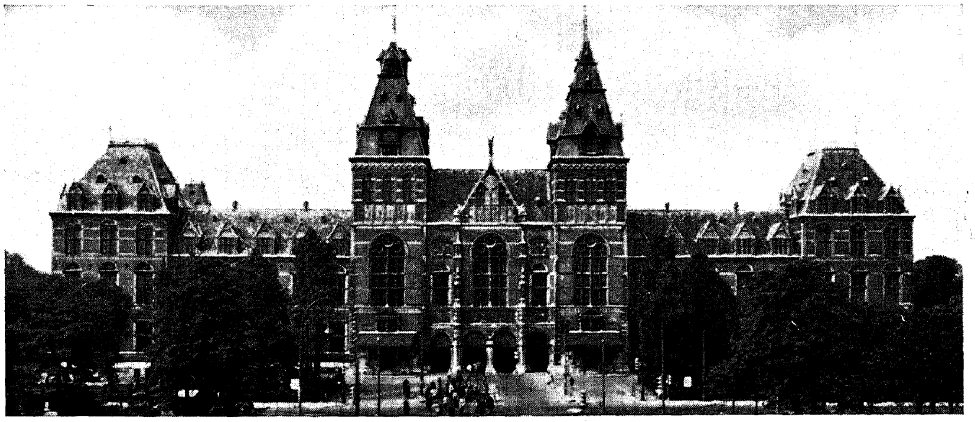


G. E. Street: Rome, St Paul's American Church, 1873–6

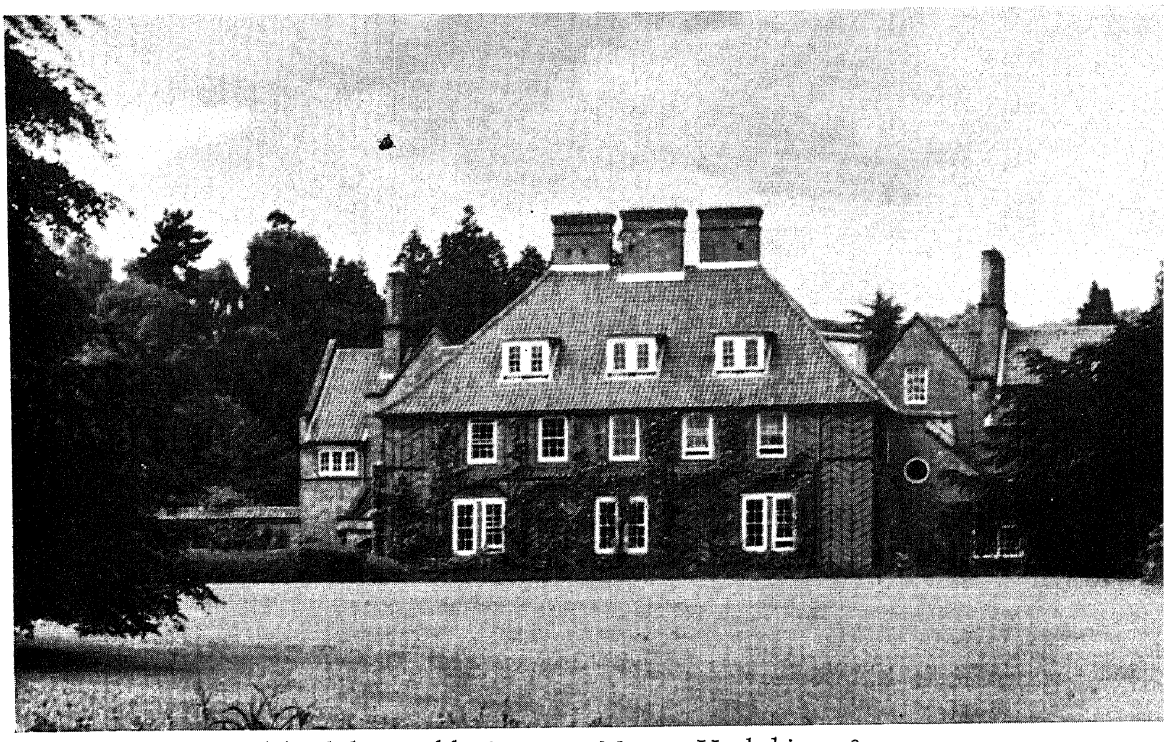
(A) E.-E. Viollet-le-Duc:
Paris, block of flats, Rue de Douai,
c. 1860



(B) P. J. H. Cuijpers:
Amsterdam, Maria Magdalenakerk,
1887

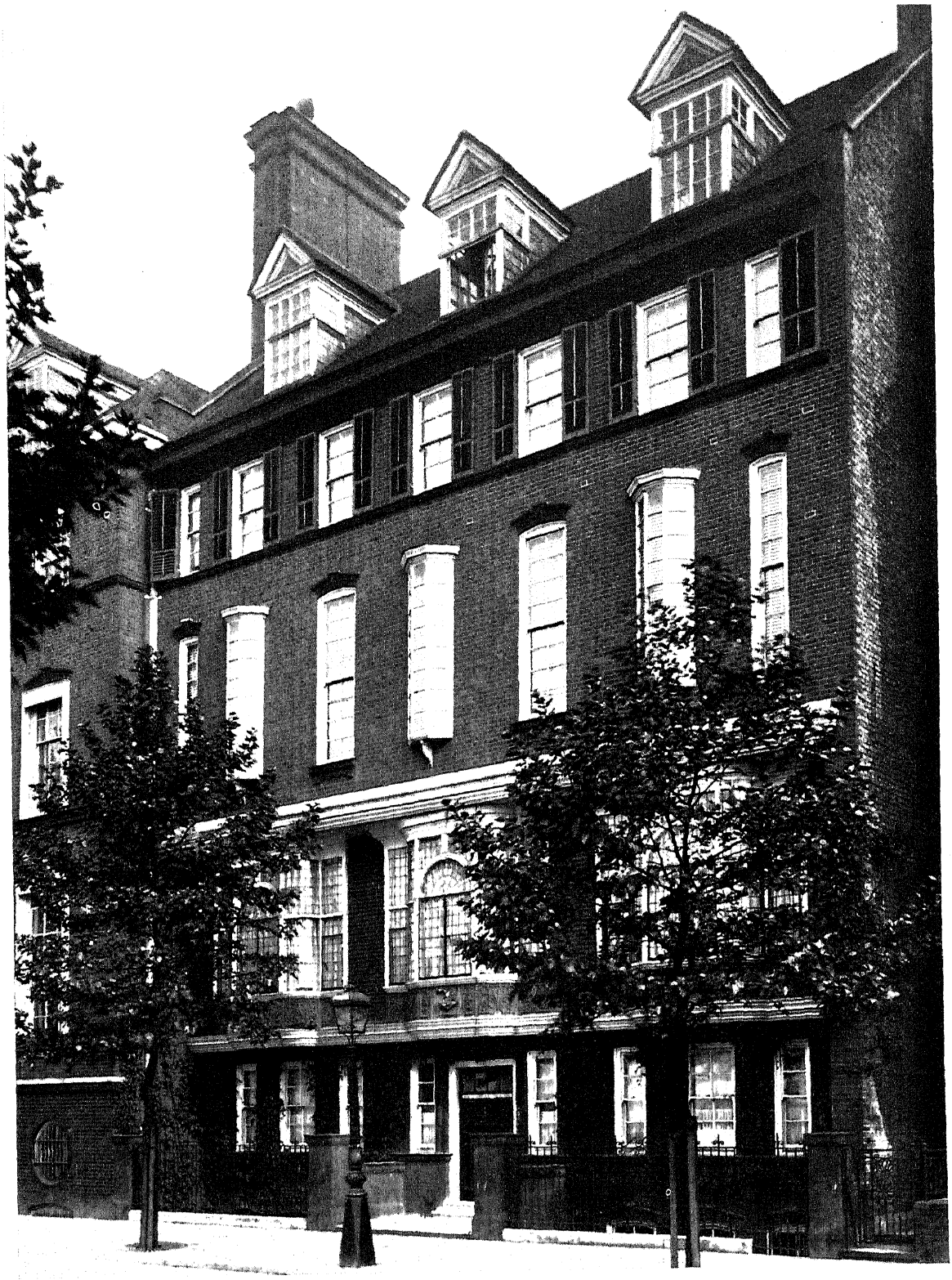


(C) P. J. H. Cuijpers: Amsterdam, Rijksmuseum, 1877–85



(A) Philip Webb: Smeaton Manor, Yorkshire, 1877–9

(B) R. Norman Shaw: Withyham, Sussex, Glen Andred, 1866–7

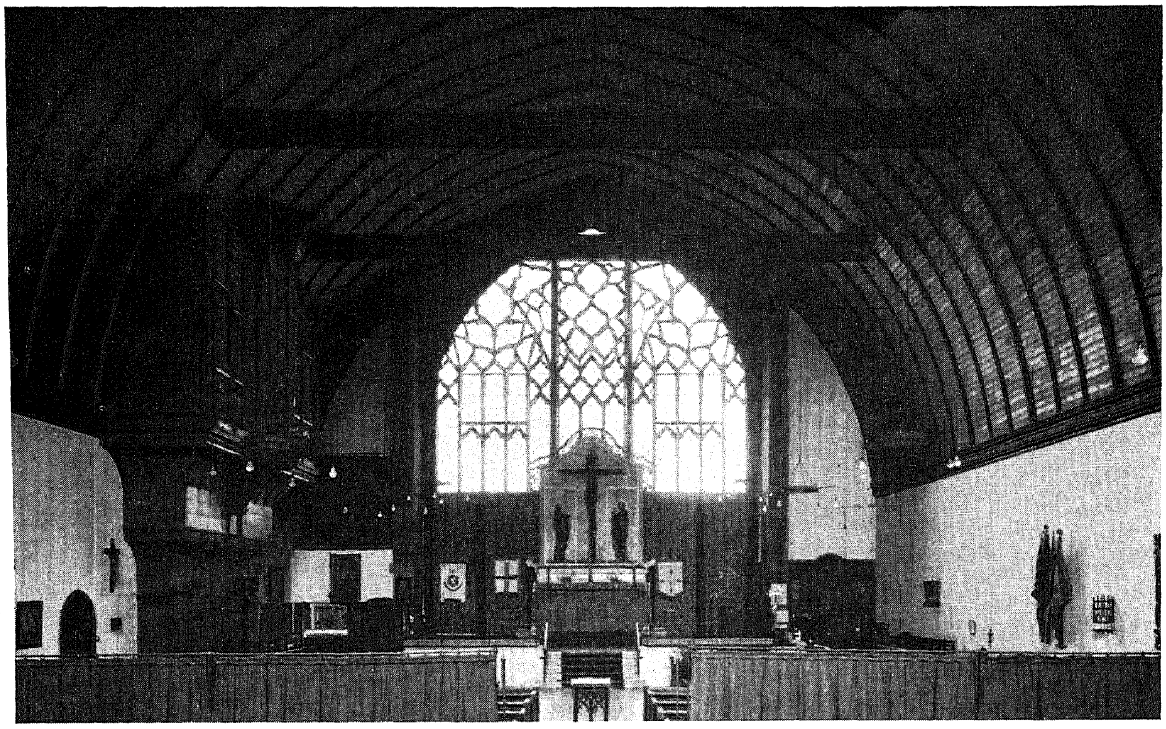


R. Norman Shaw: London, Old Swan House, 1876

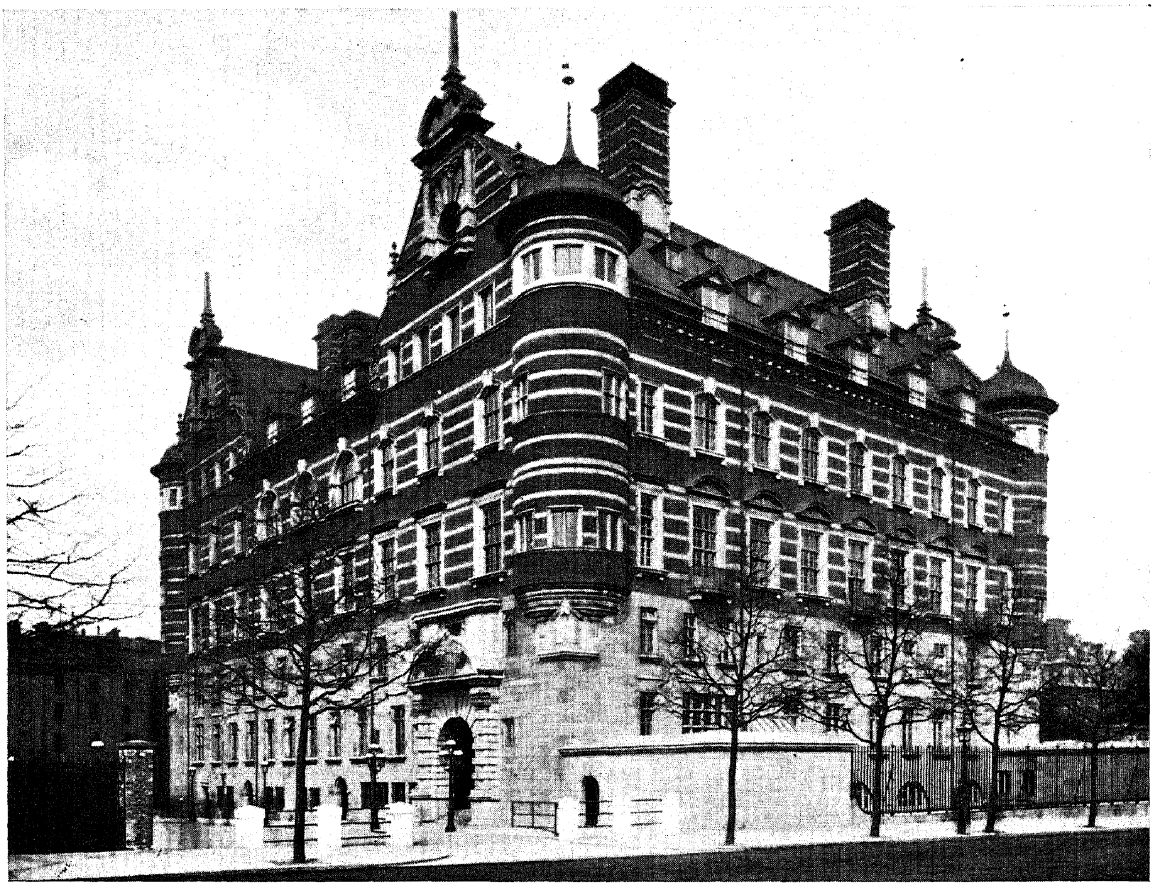
(A) R. Norman Shaw: London, Albert Hall Mansions, 1879

(B) George & Peto: London, W. S. Gilbert house, 1882

R. Norman Shaw: London, Fred White house, 1887

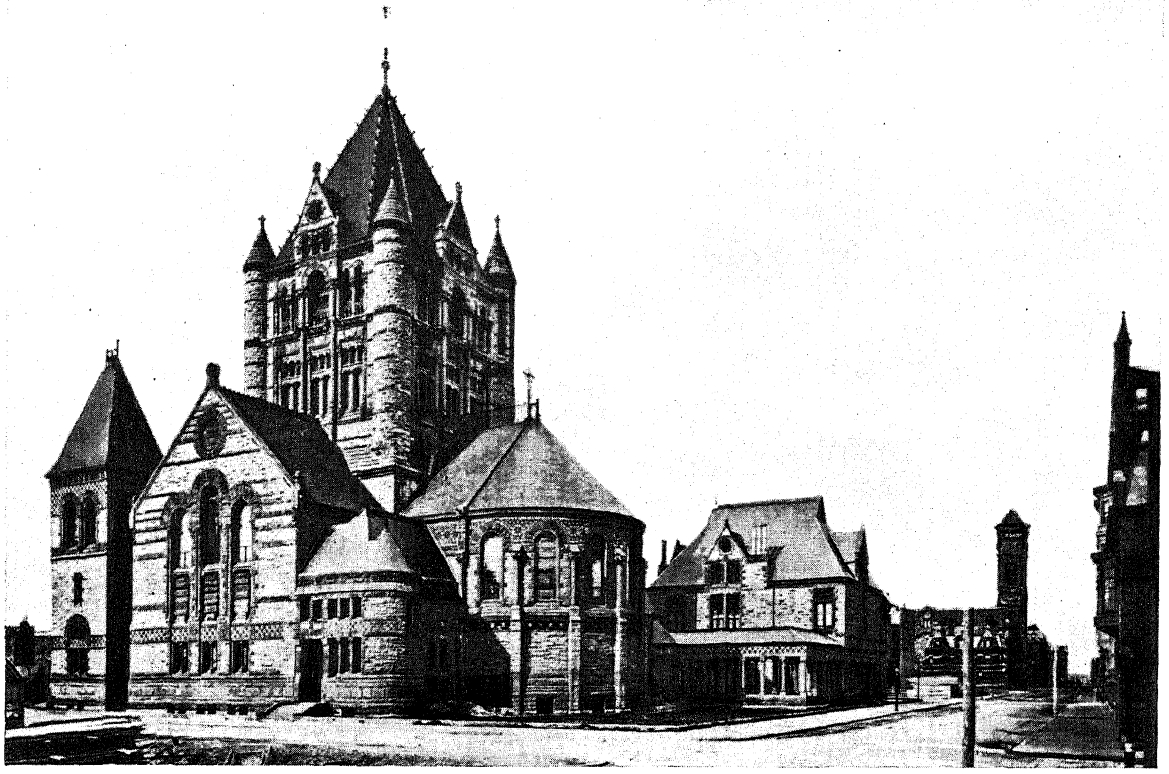


(A) R. Norman Shaw: London, Holy Trinity, Latimer Road, 1887–9

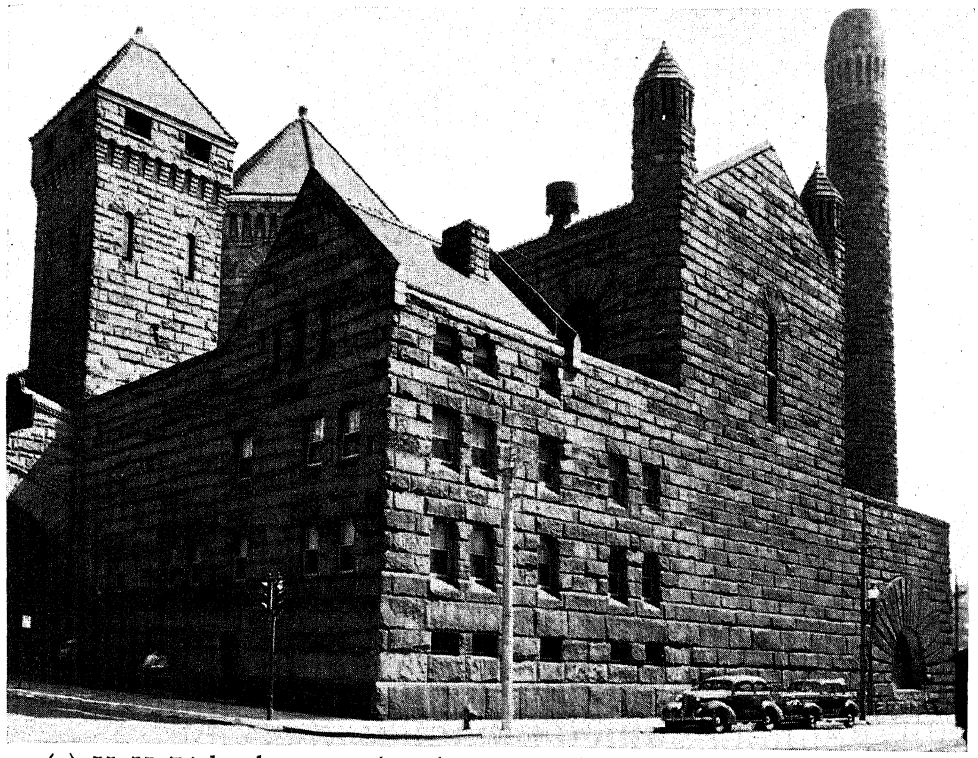


(B) R. Norman Shaw: London, New Scotland Yard, 1887

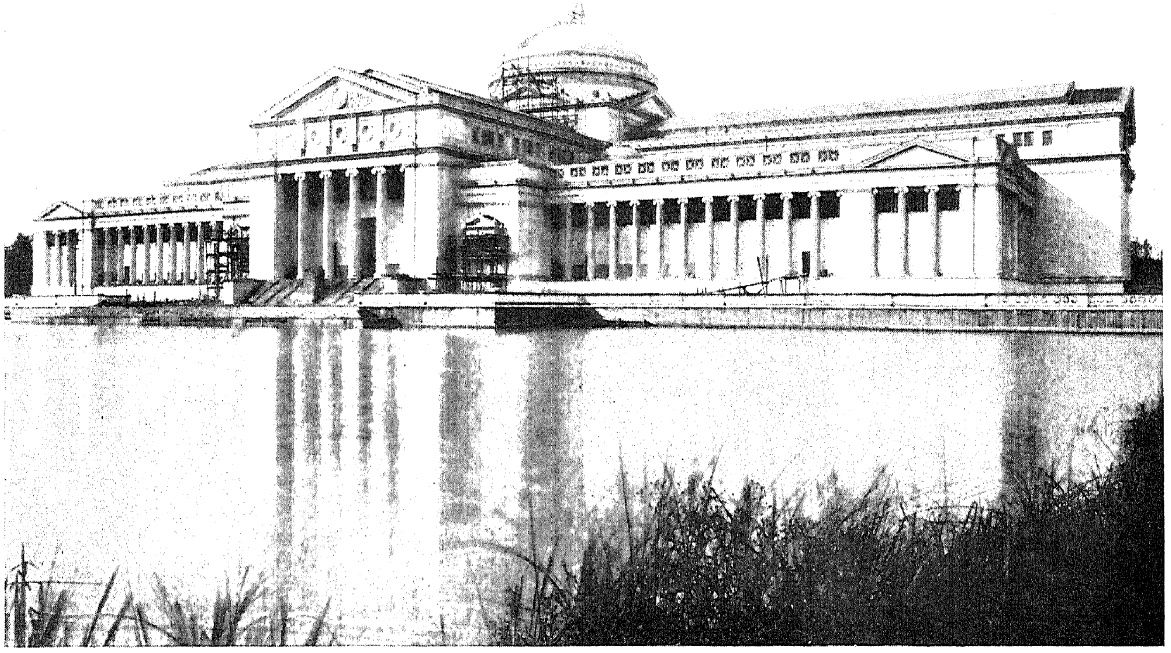
R. Norman Shaw: London, Piccadilly Hotel, 1905–8



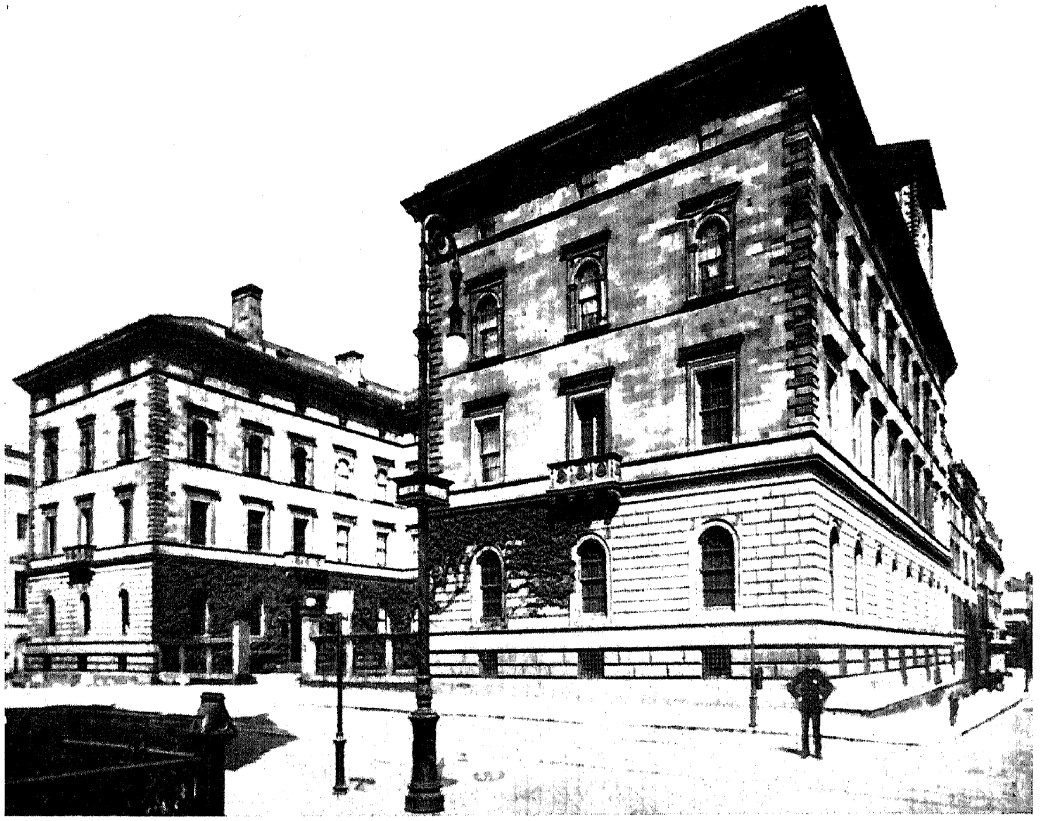
(A) H. H. Richardson: Boston, Trinity Church, 1873–7



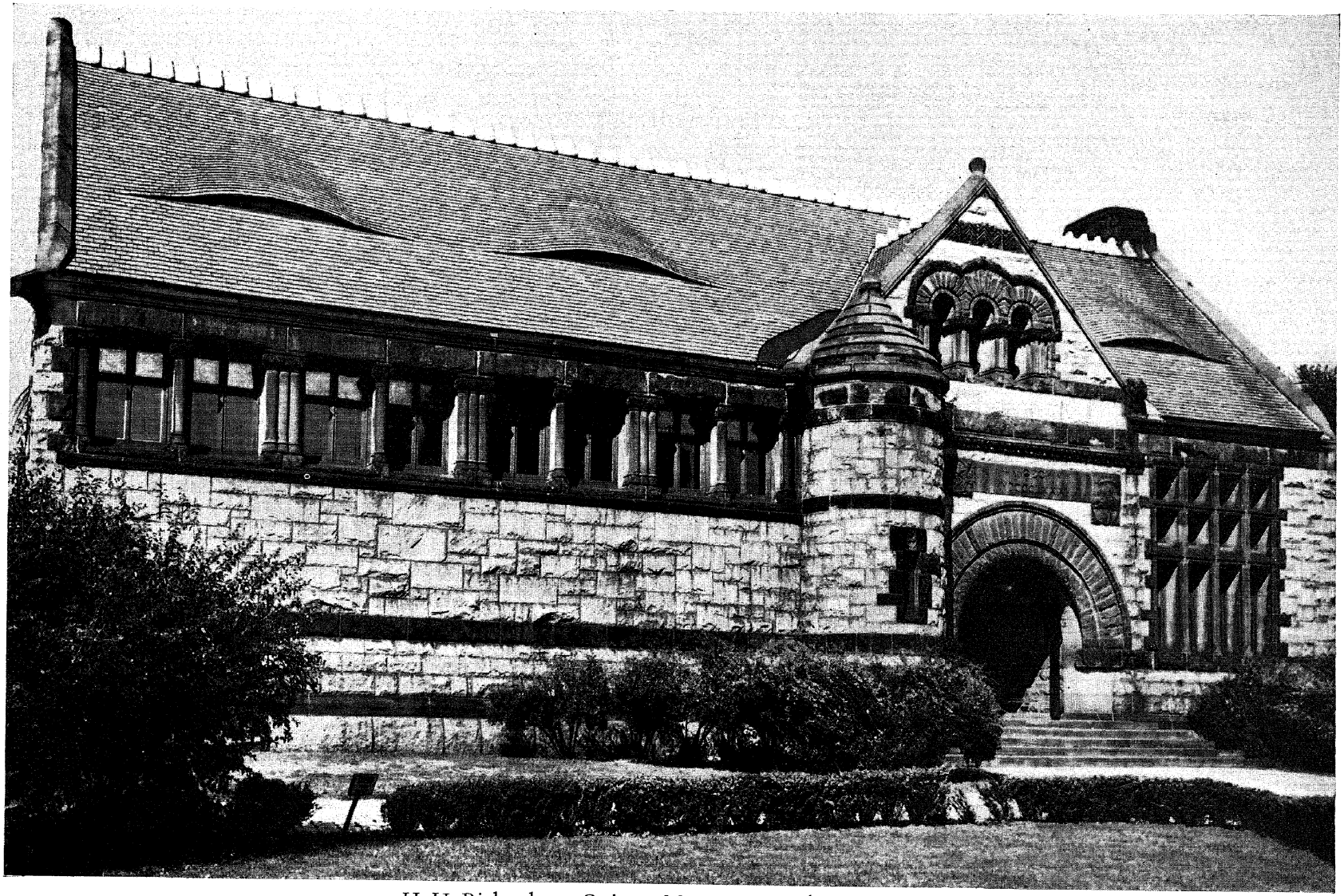
(B) H. H. Richardson: Pittsburgh, Penna, Allegheny County Jail, 1884–8



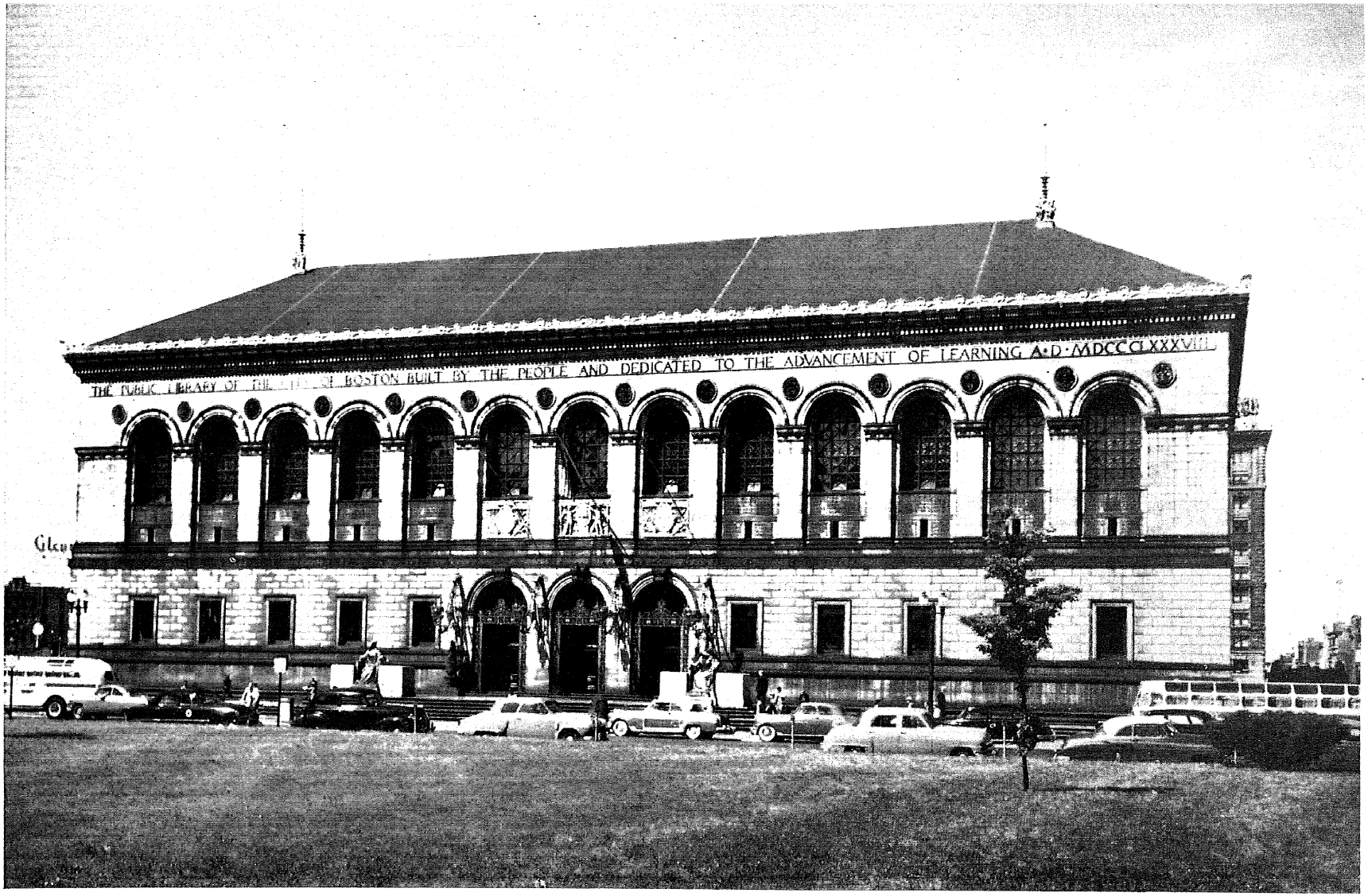
(A) Charles B. Atwood: Chicago, World's Fair, Fine Arts Building, 1892–3



(B) McKim, Mead & White: New York, Villard houses, 1883–5



H. H. Richardson: Quincy, Mass., Crane Library, 1880–3

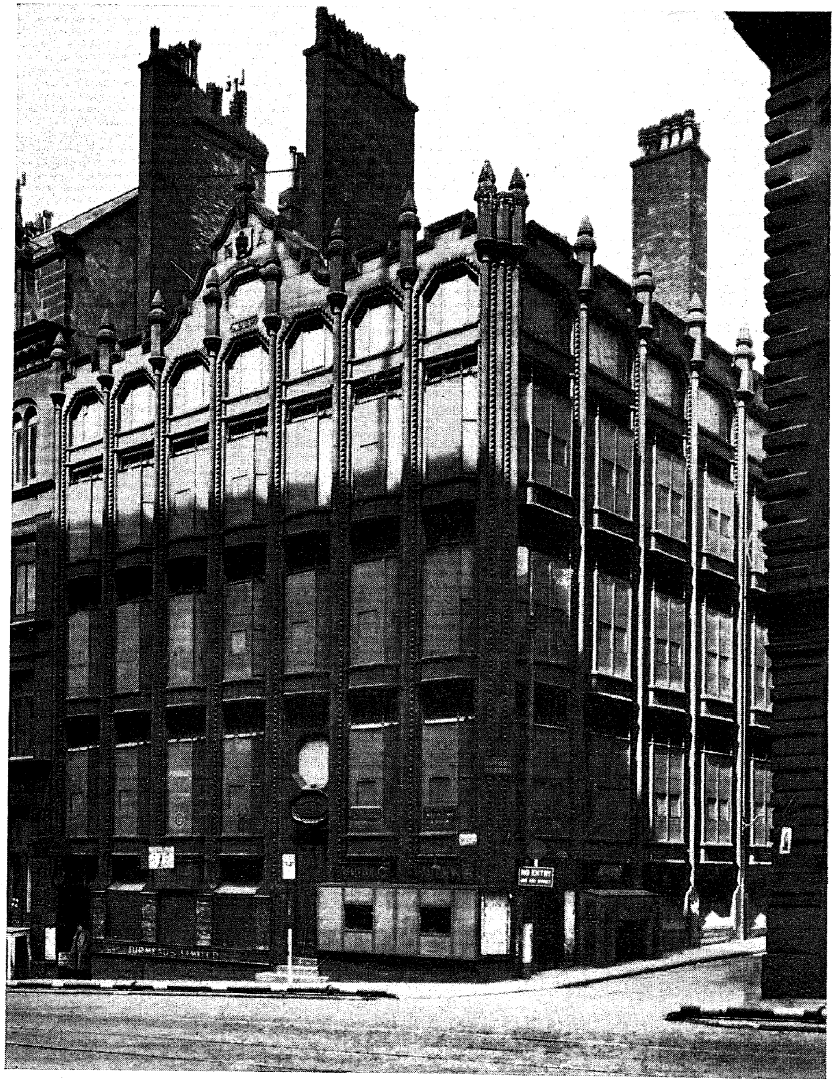


McKim, Mead & White: Boston, Public Library, 1888–92

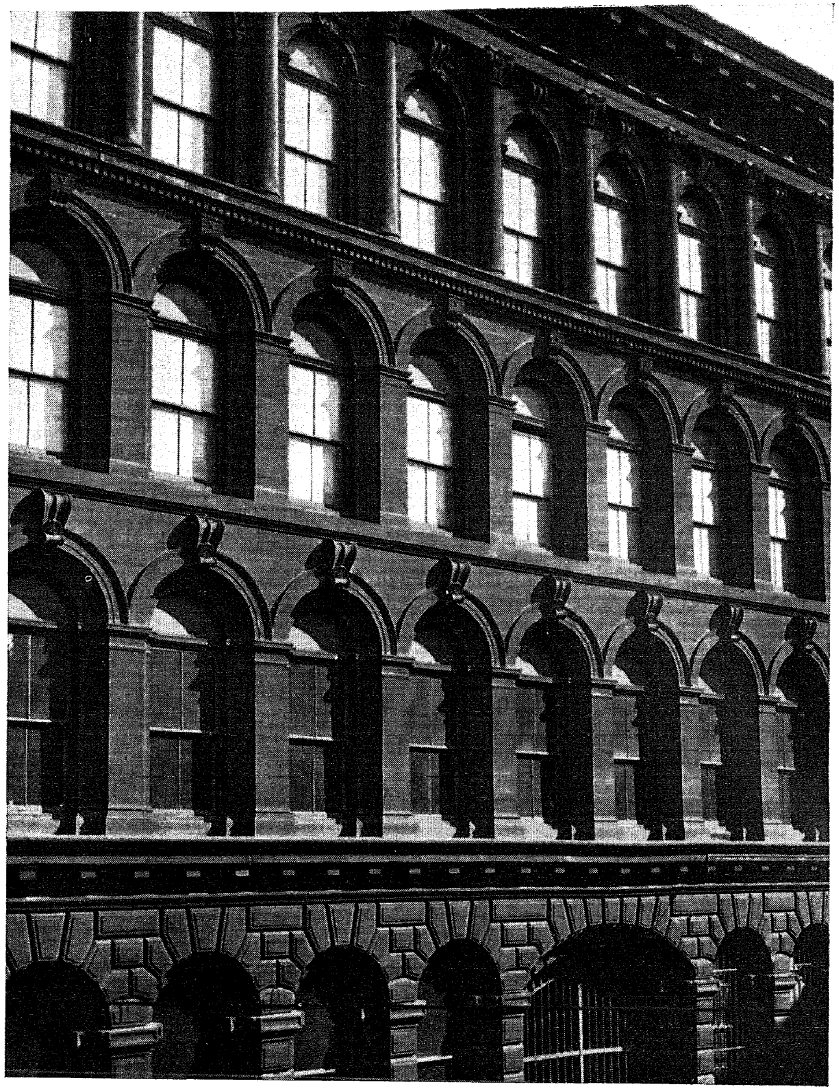
(A) C. R. Cockerell: Liverpool, Bank Chambers, 1849

(B) Alexander Parris: Boston, North Market Street, designed 1823

E. W. Godwin: Bristol, 104 Stokes Croft, *c.* 1862



(A) Peter Ellis: Liverpool, Oriel Chambers, 1864–5



(B) Lockwood & Mawson (?): Bradford, Kassapian's Warehouse, *c.* 1862

(A) George B. Post: New York, Western Union Building, 1873–5

(B) Burnham & Root and D. H. Burnham & Co.: Chicago, Reliance Building, 1890, 1894

(A) H. H. Richardson: Hartford, Conn., Brown-Thompson Department Store (Cheney Block), 1875–6

(B) H. H. Richardson: Chicago, Marshall Field Wholesale Store, 1885–7

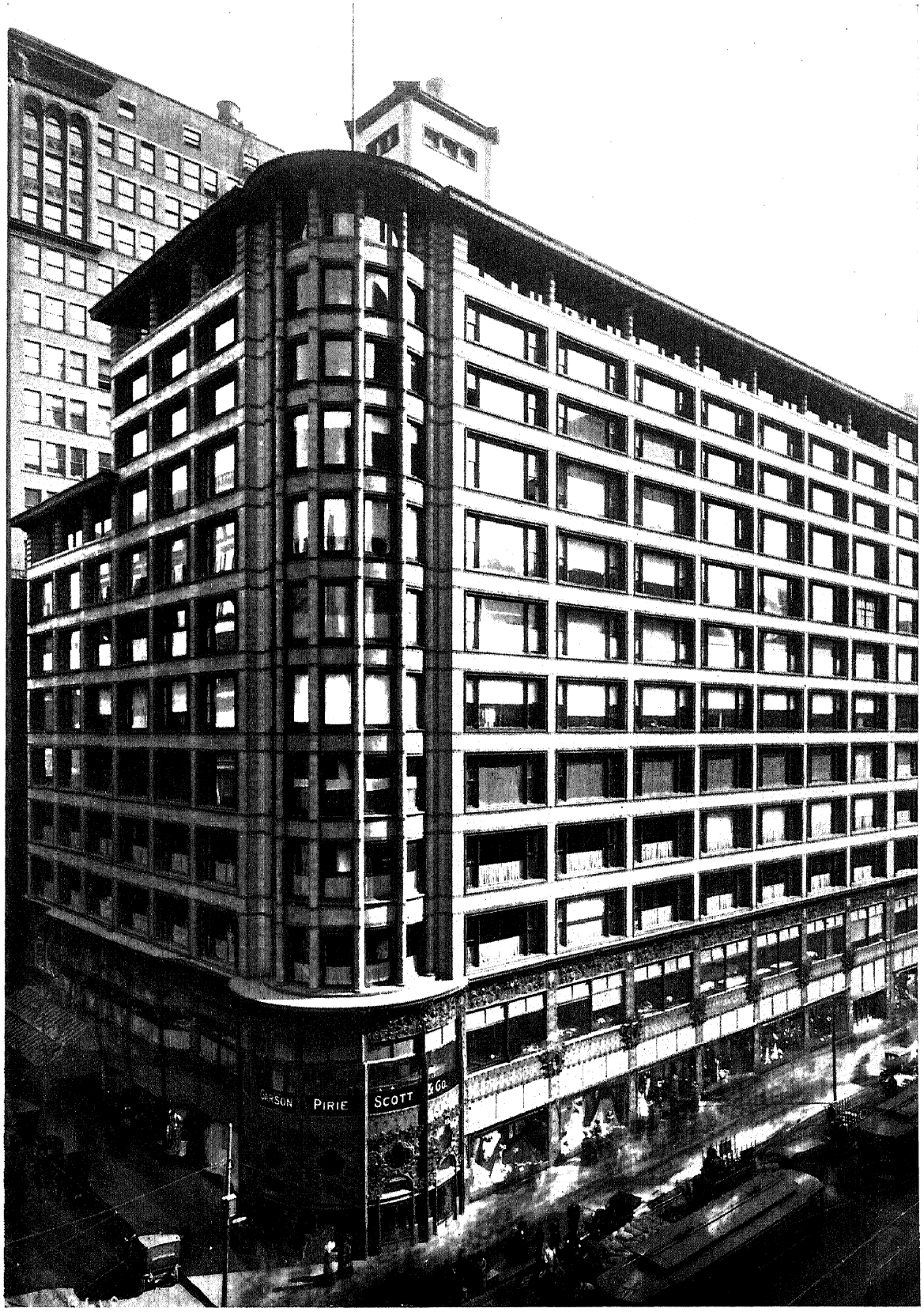
(A) Adler & Sullivan: Chicago, Auditorium Building, 1887–9

(B) William Le B. Jenney: Chicago, Sears, Roebuck & Co. (Leiter) Building, 1889–90

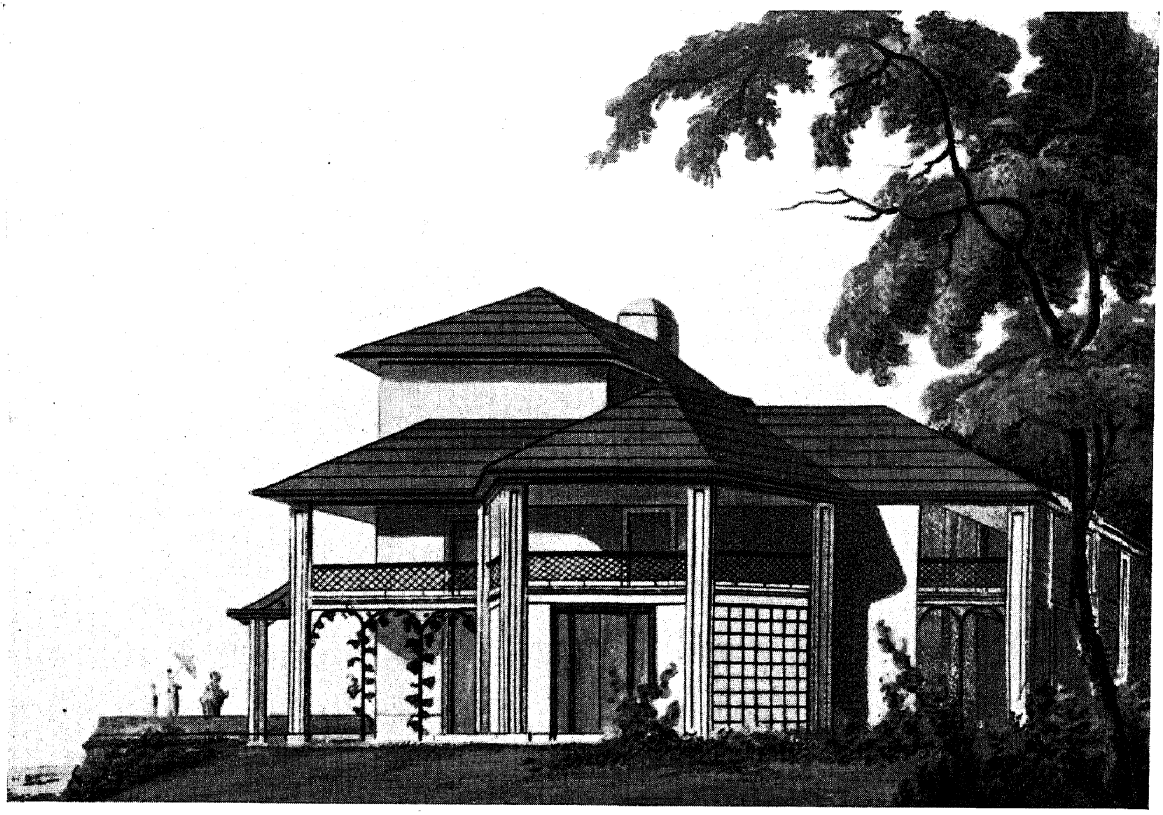
Adler & Sullivan: St Louis, Wainwright Building, 1890–1

Adler & Sullivan: Buffalo, N.Y., Guaranty Building, 1894–5

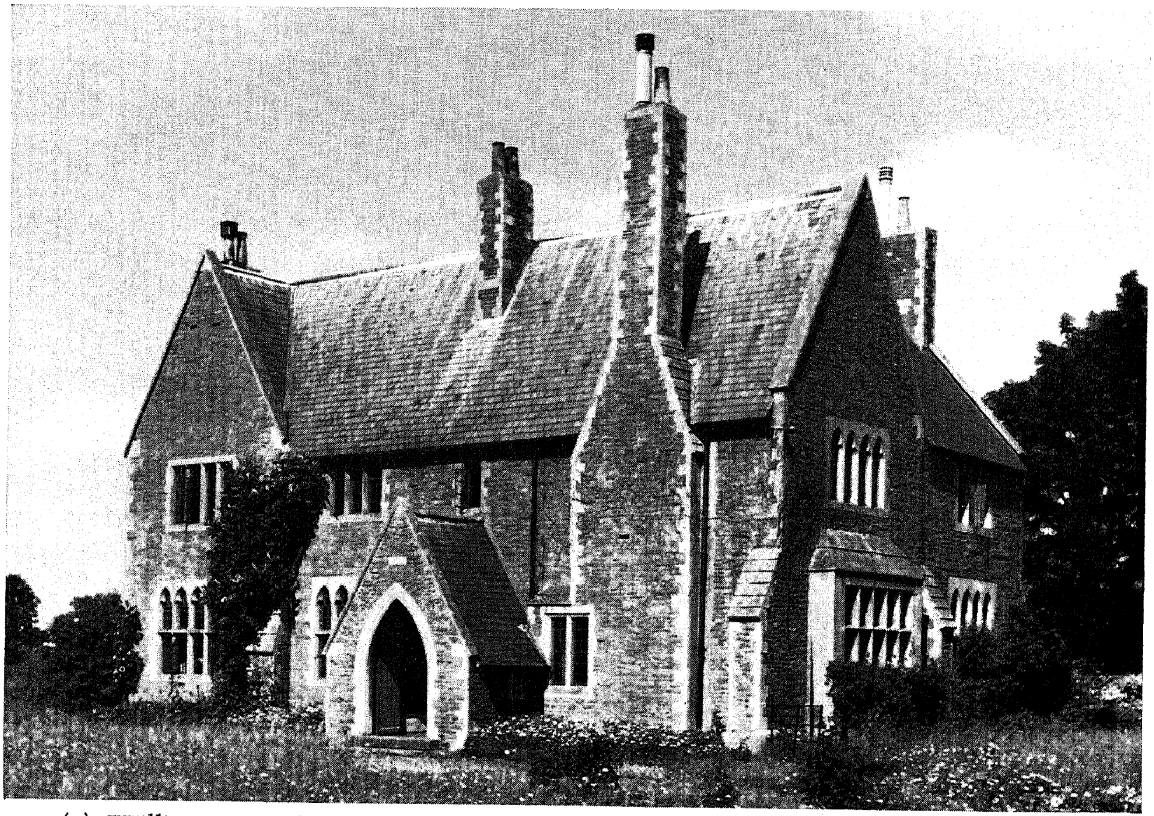
Holabird & Roche; Louis H. Sullivan: Chicago, 19 South Michigan Avenue; Gage Building, 1898–9



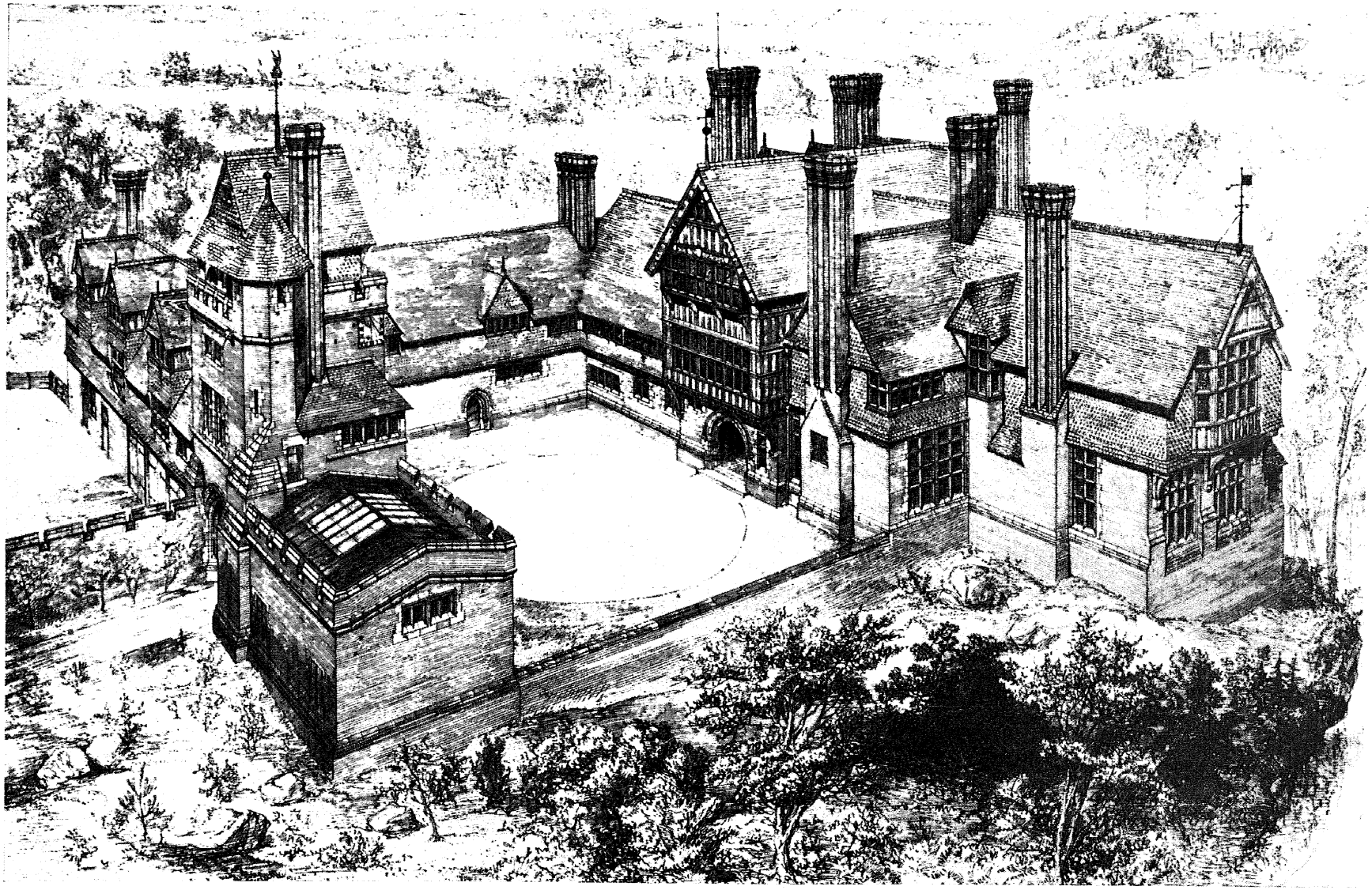
Louis H. Sullivan: Chicago, Carson, Pirie & Scott Department Store, 1899–1901, 1903–4



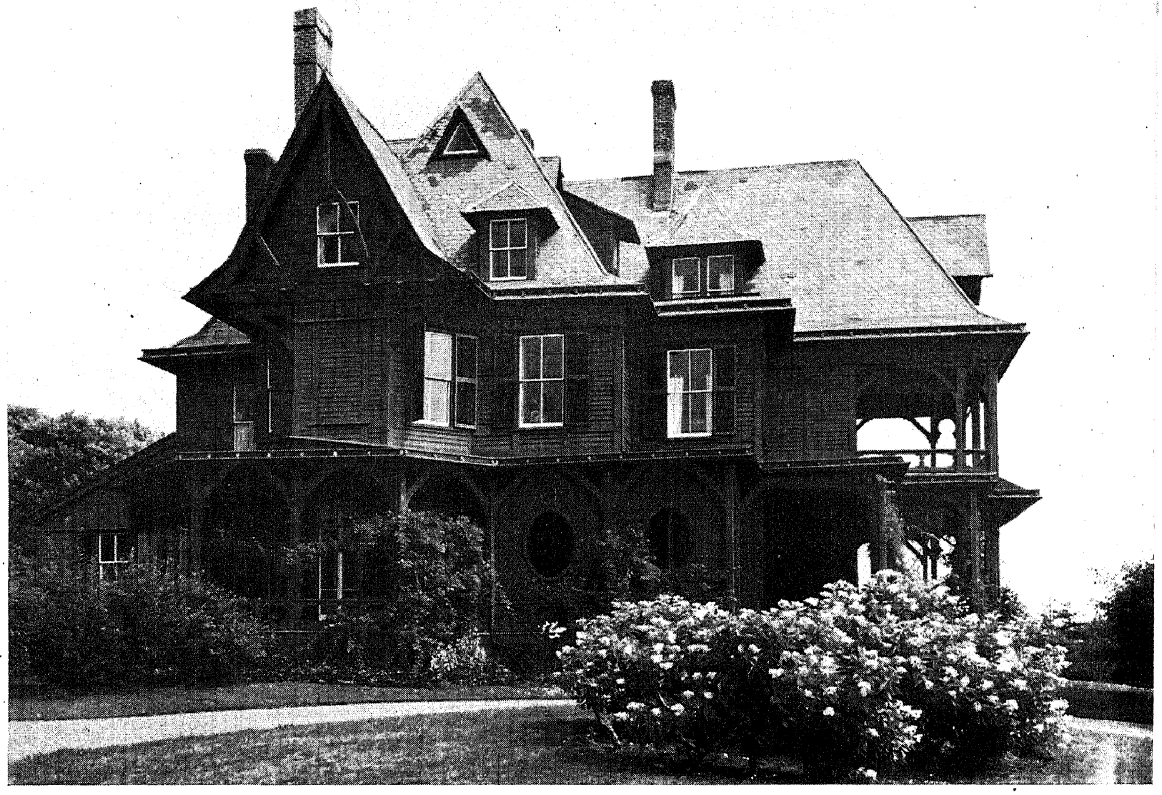
(A) J. B. Papworth: 'Cottage Orné', 1818



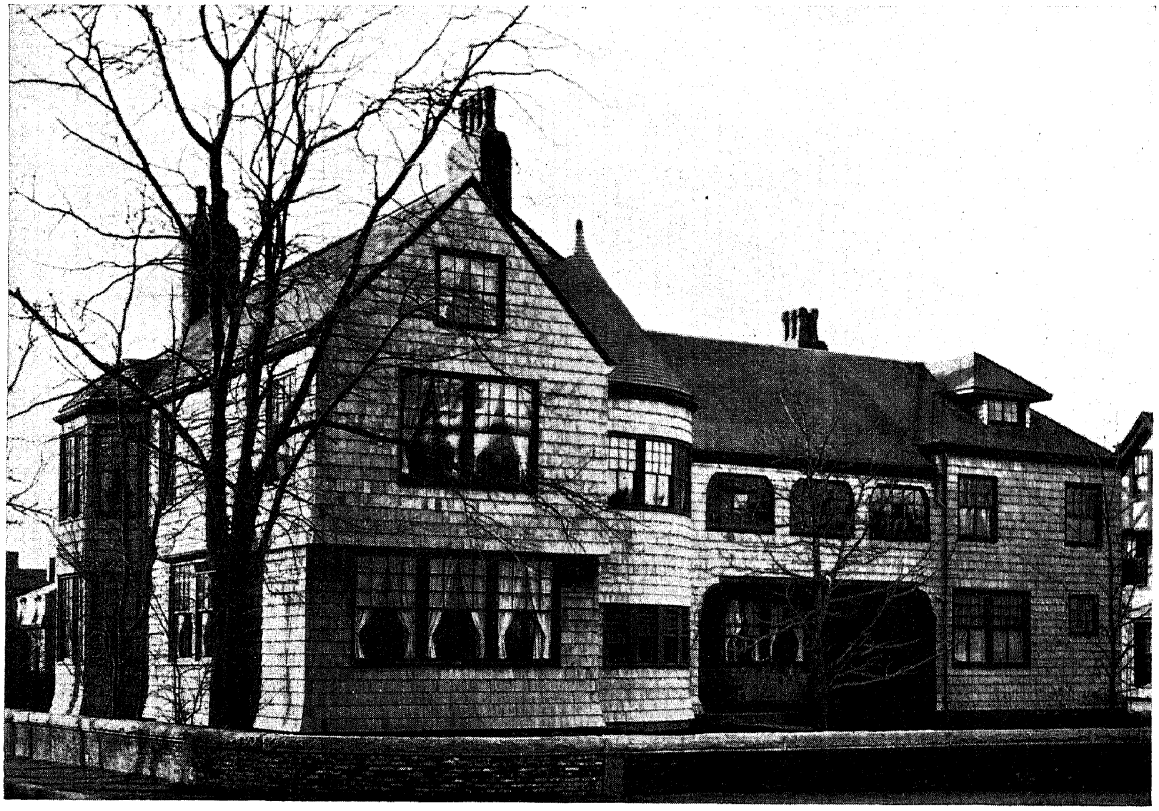
(B) William Butterfield: Coalpitheath, Gloucestershire, St Saviour's Vicarage, 1844–5



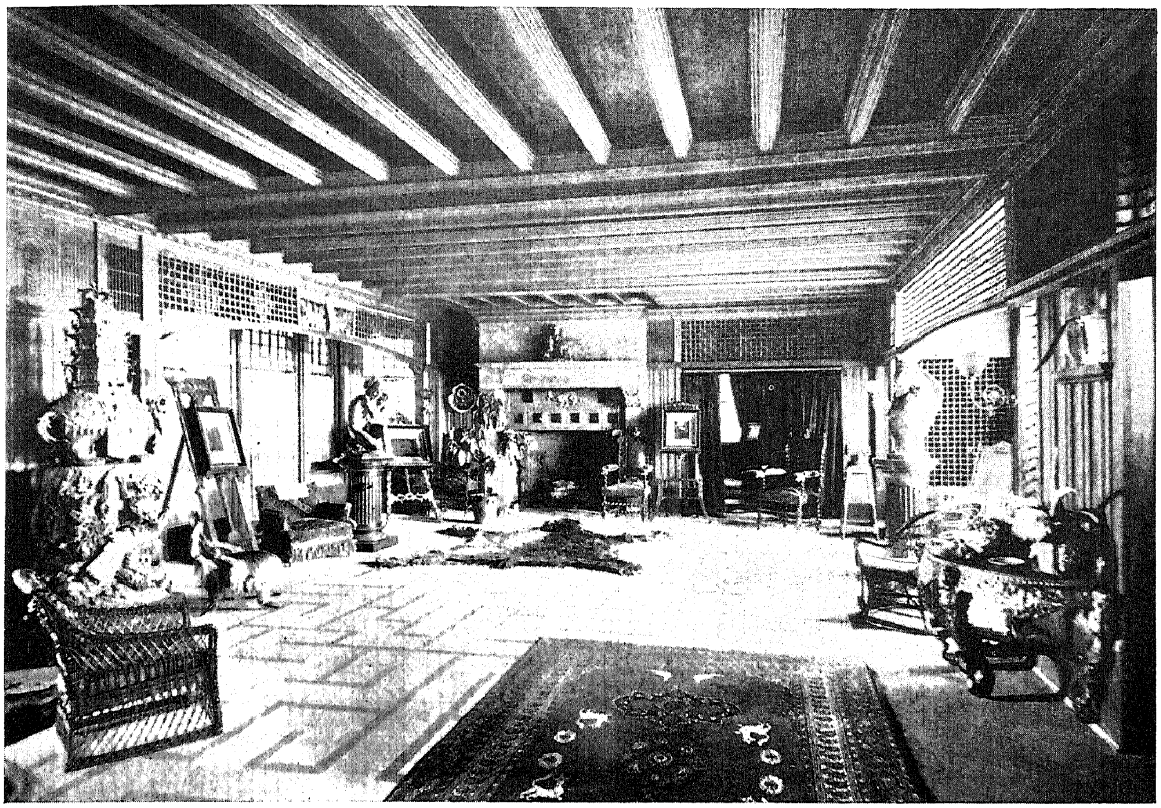
R. Norman Shaw: nr. Withyham, Sussex, Leyswood, 1868



(A) Dudley Newton: Middletown, R.I., Sturtevant house, 1872



(B) H. H. Richardson: Cambridge, Mass., Stoughton house, 1882–3

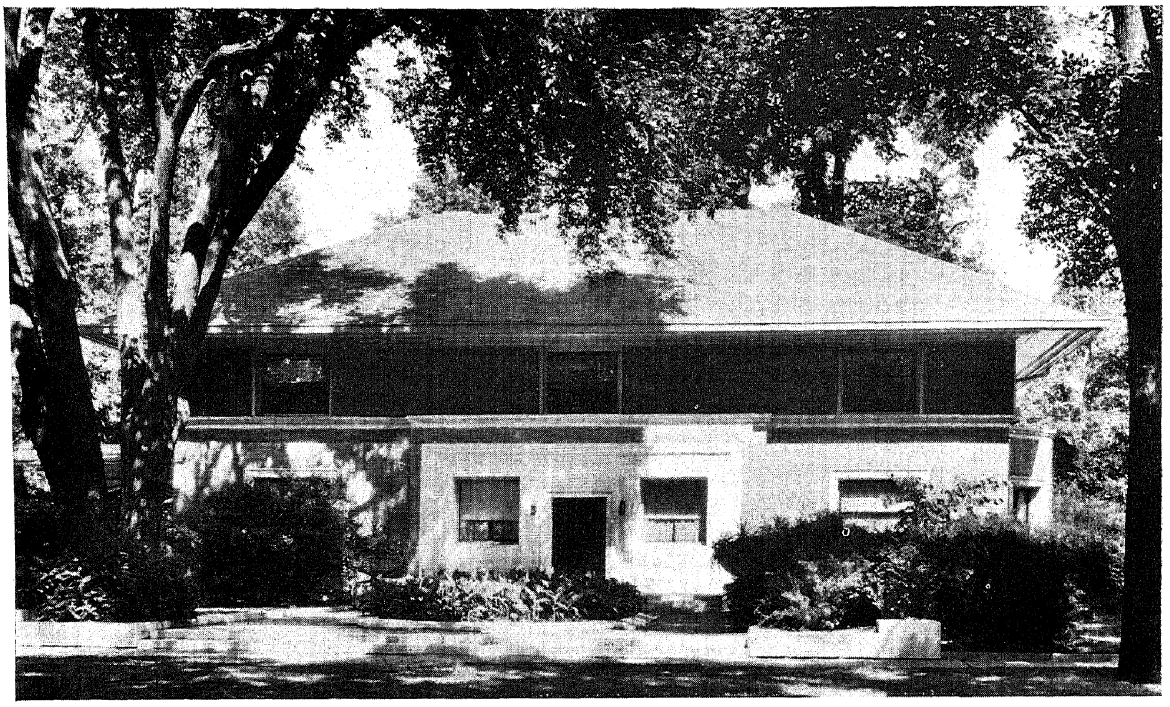


(A) McKim, Mead & White: Elberon, N.J., H. Victor Newcomb house, 1880–1

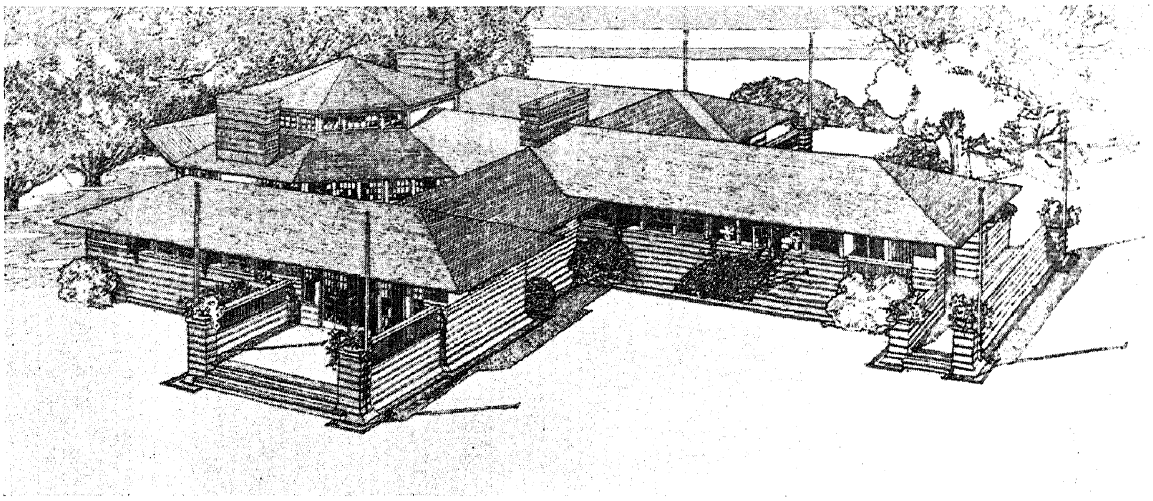
(B) Bruce Price: Tuxedo Park, N.Y., Pierre Lorillard house, 1885–6

McKim, Mead & White: Newport, R.I., Isaac Bell, Jr, house, 1881–2

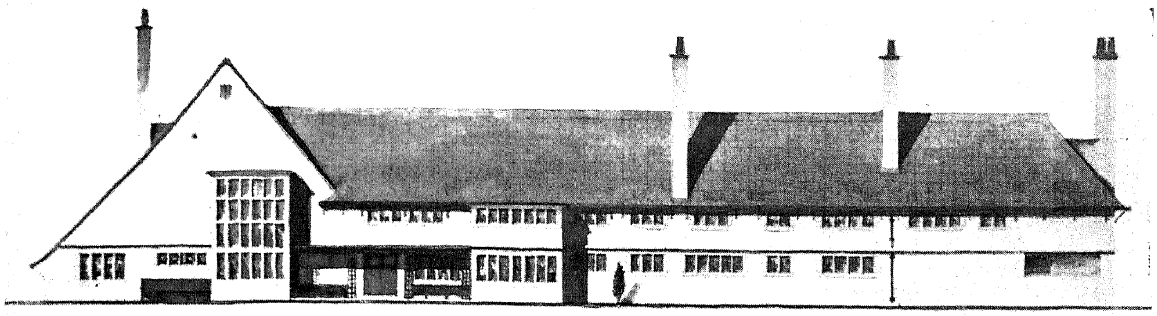
McKim, Mead & White: Bristol, R.I., W. G. Low house, 1887



(A) Frank Lloyd Wright: River Forest, Ill., W. H. Winslow house, 1893



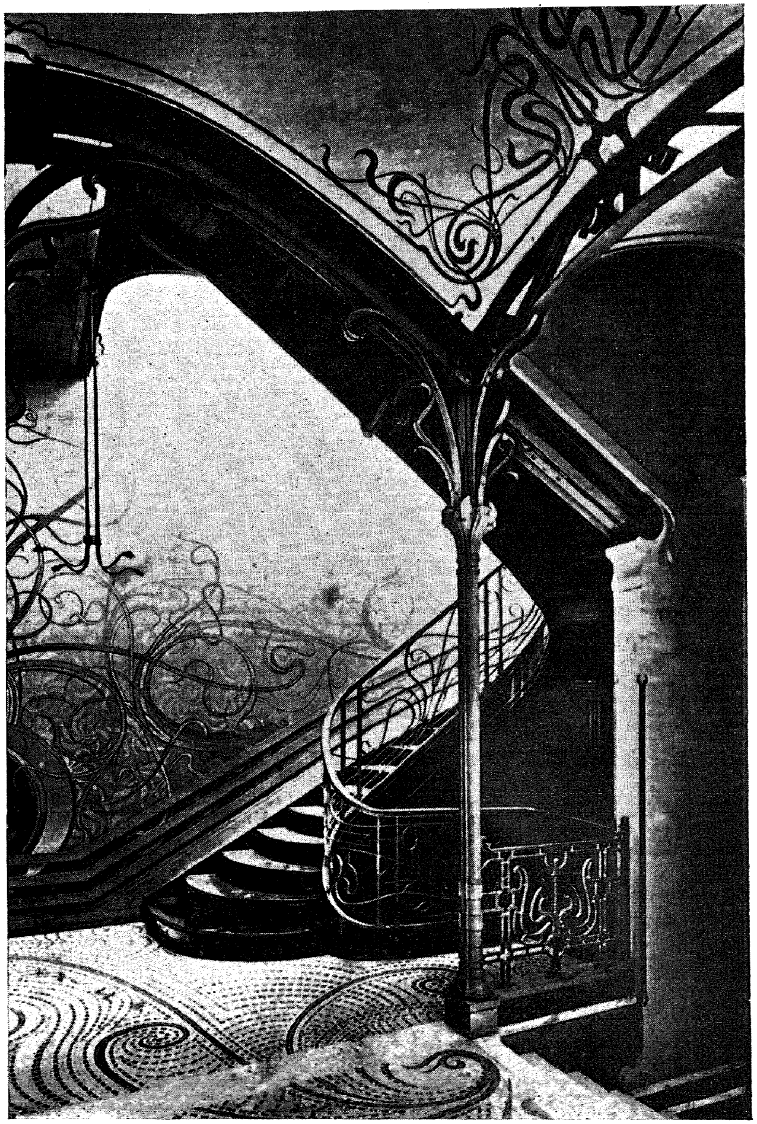
(B) Frank Lloyd Wright: River Forest, Ill., River Forest Golf Club, 1898, 1901



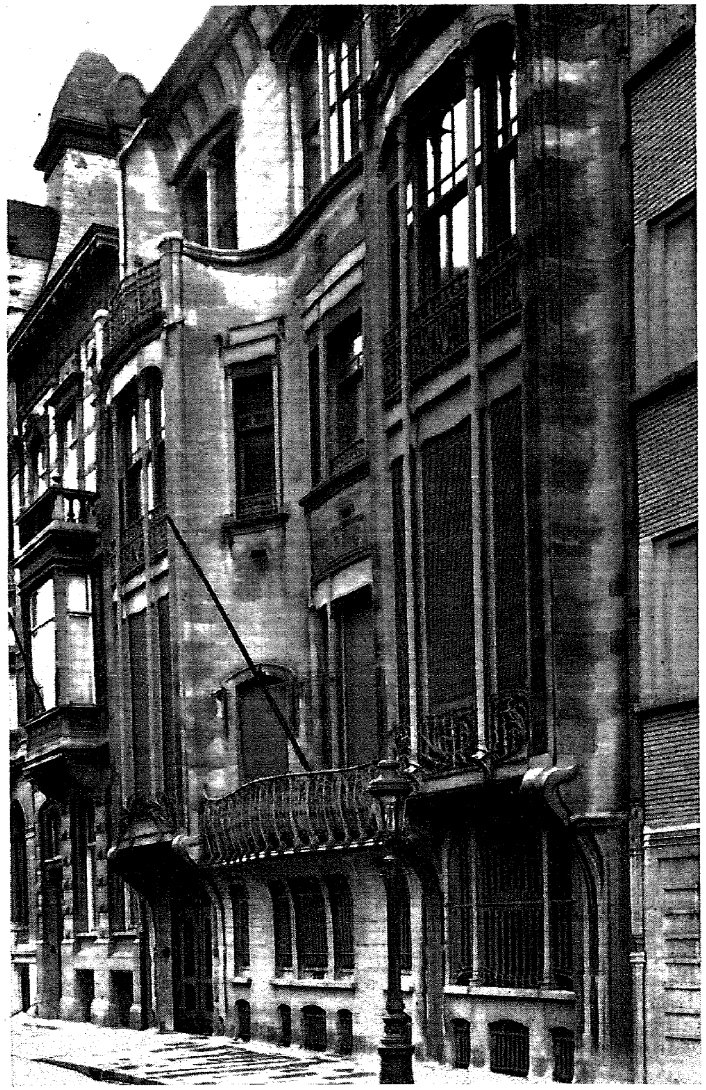
(A) C. F. A. Voysey: Hog's Back, Surrey, Julian Sturgis house, elevation, 1896

(B) C. F. A. Voysey: Lake Windermere, Broadleys, 1898–9

(A) Gustave Eiffel: Paris, Eiffel Tower, 1887–9

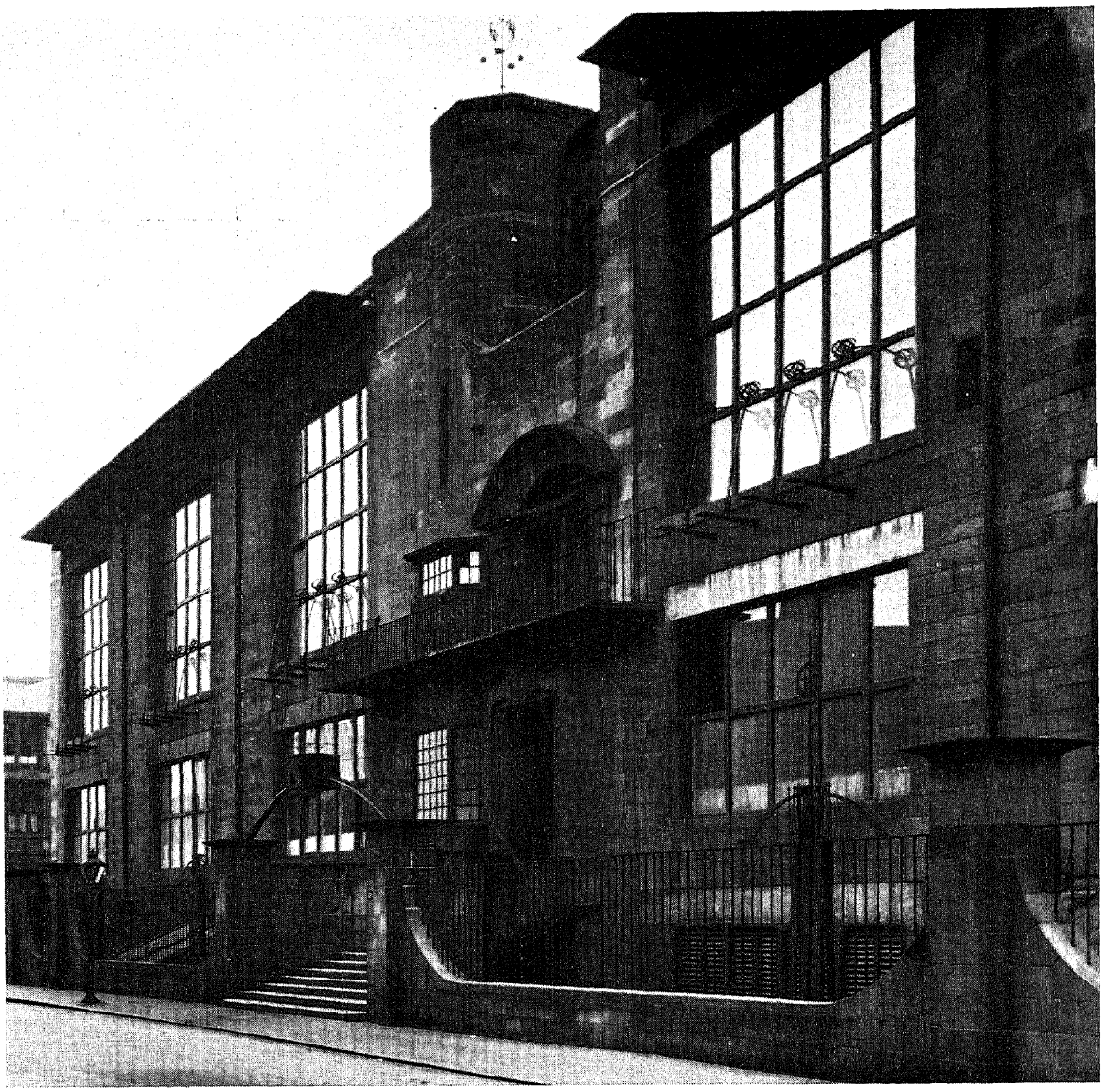


(B) Baron Victor Horta: Brussels, Tassel house, 1892–3

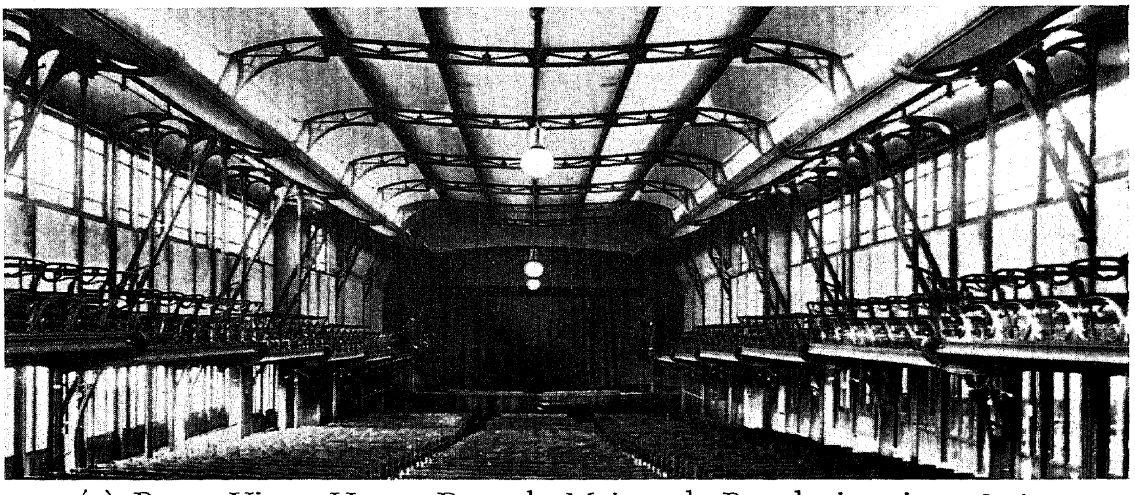


(A) Baron Victor Horta: Brussels,
Solvay house, 1895–1900

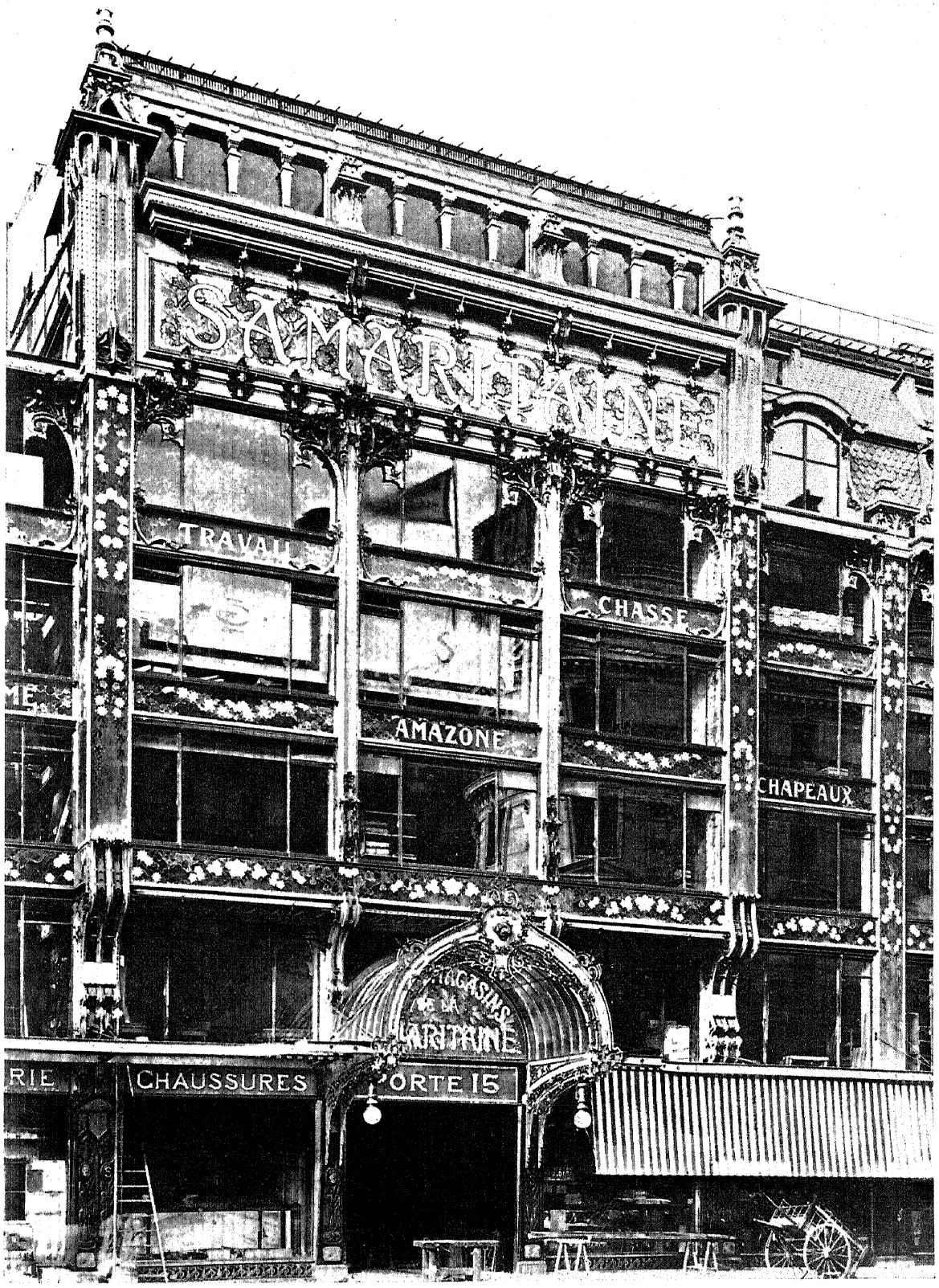
(B) Baron Victor Horta: Brussels,
L'Innovation Department Store, 1901



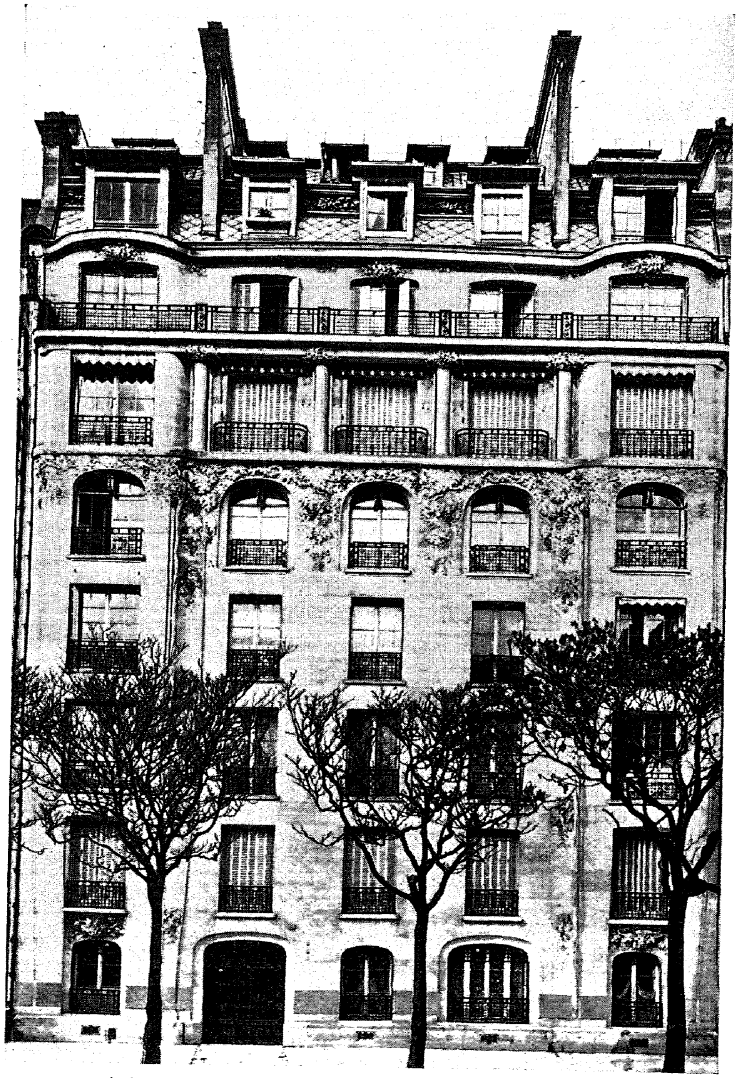
(A) C. R. Mackintosh: Glasgow, School of Art, 1897–9



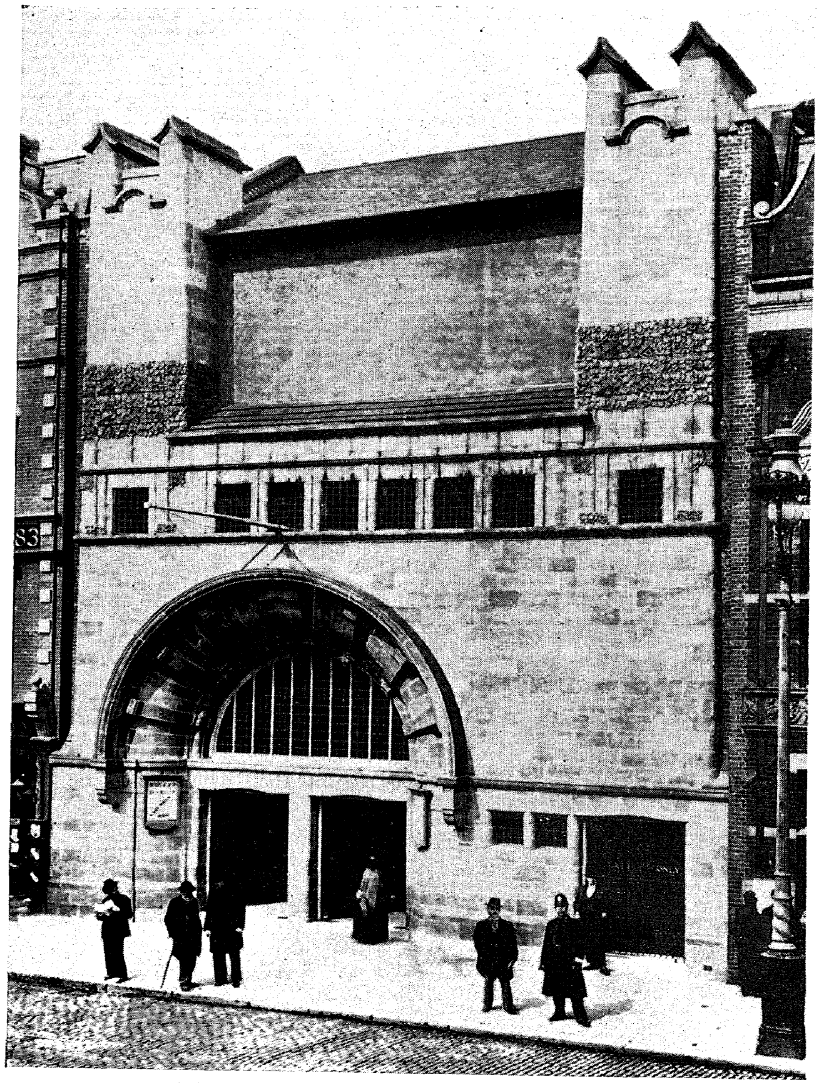
(B) Baron Victor Horta: Brussels, Maison du Peuple, interior, 1896–9



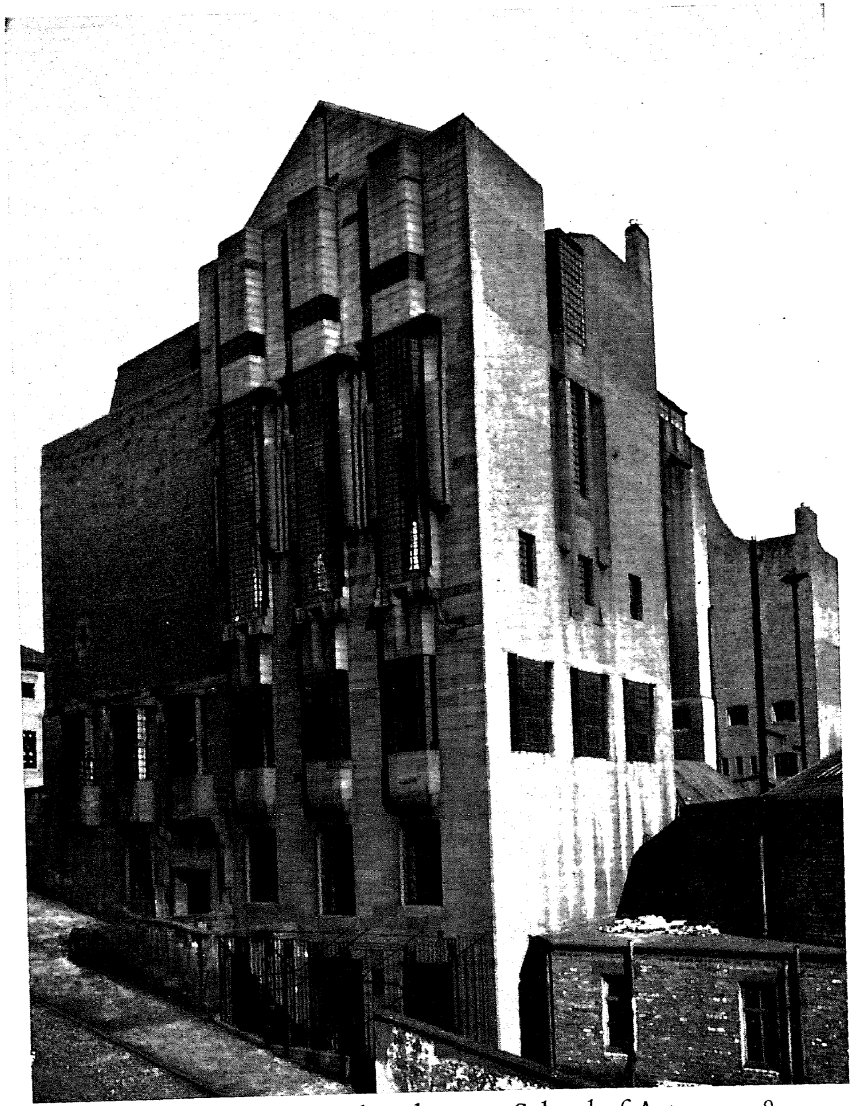
Frantz Jourdain: Paris, Samaritaine Department Store, 1905



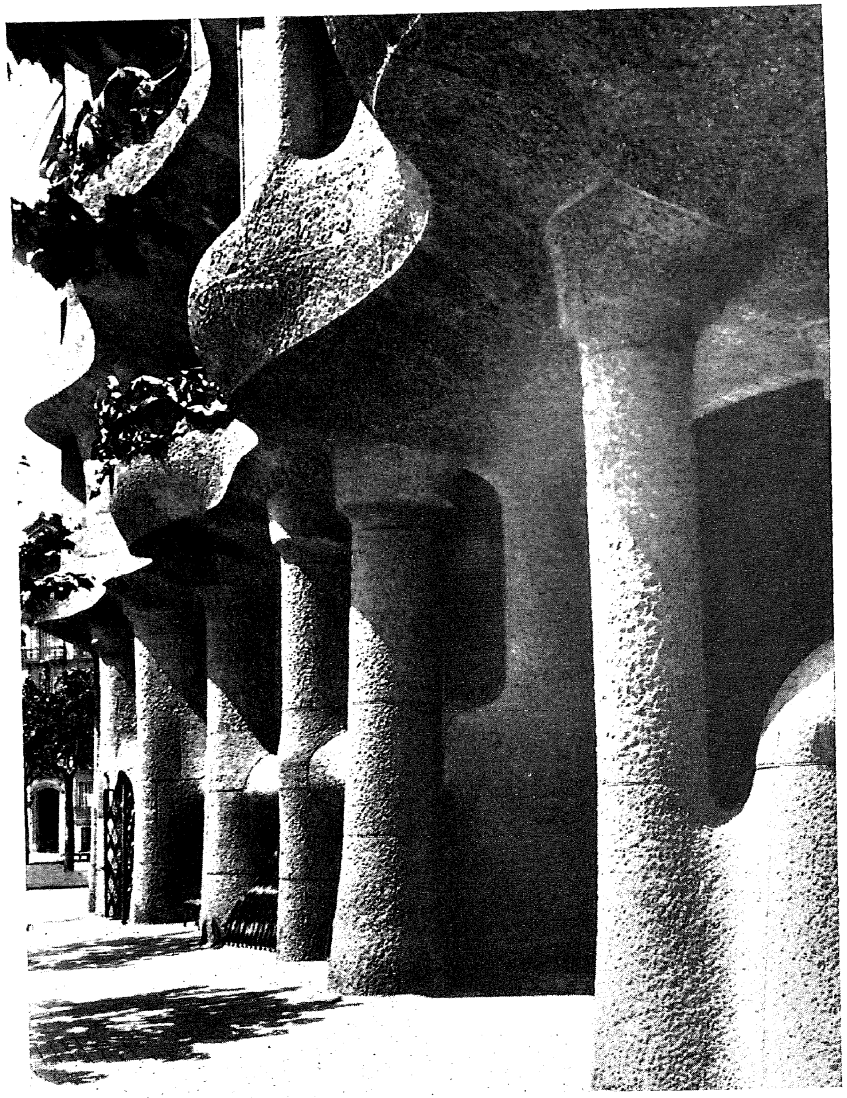
(A) Auguste Perret: Paris, block of flats, 119 Avenue Wagram, 1902



(B) C. Harrison Townsend: London, Whitechapel Art Gallery, 1897–9



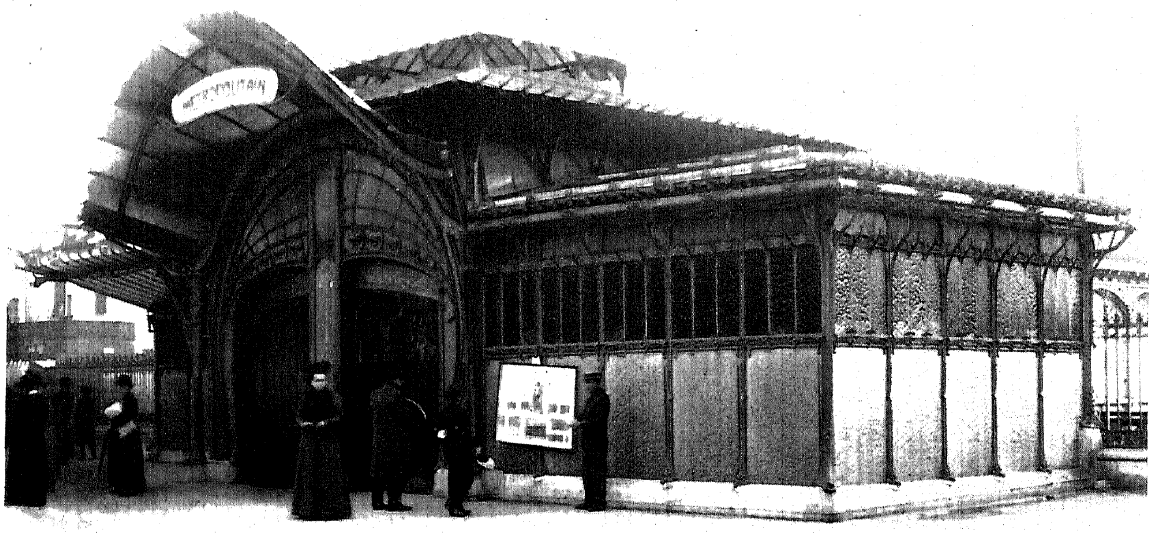
(A) C. R. Mackintosh: Glasgow, School of Art, 1907–8



(B) Antoni Gaudí: Barcelona, Casa Milá, ground storey, 1905–7

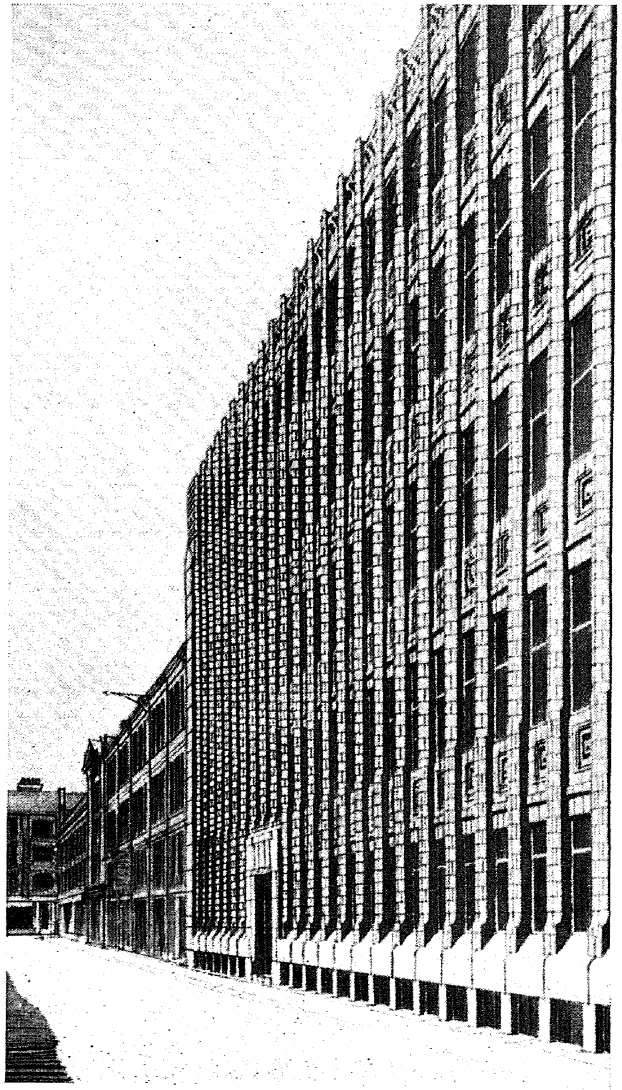
Antoni Gaudí: Barcelona, Casa Batlló, front, 1905–7

(A) Antoni Gaudí: Barcelona, Casa Milá, 1905–7

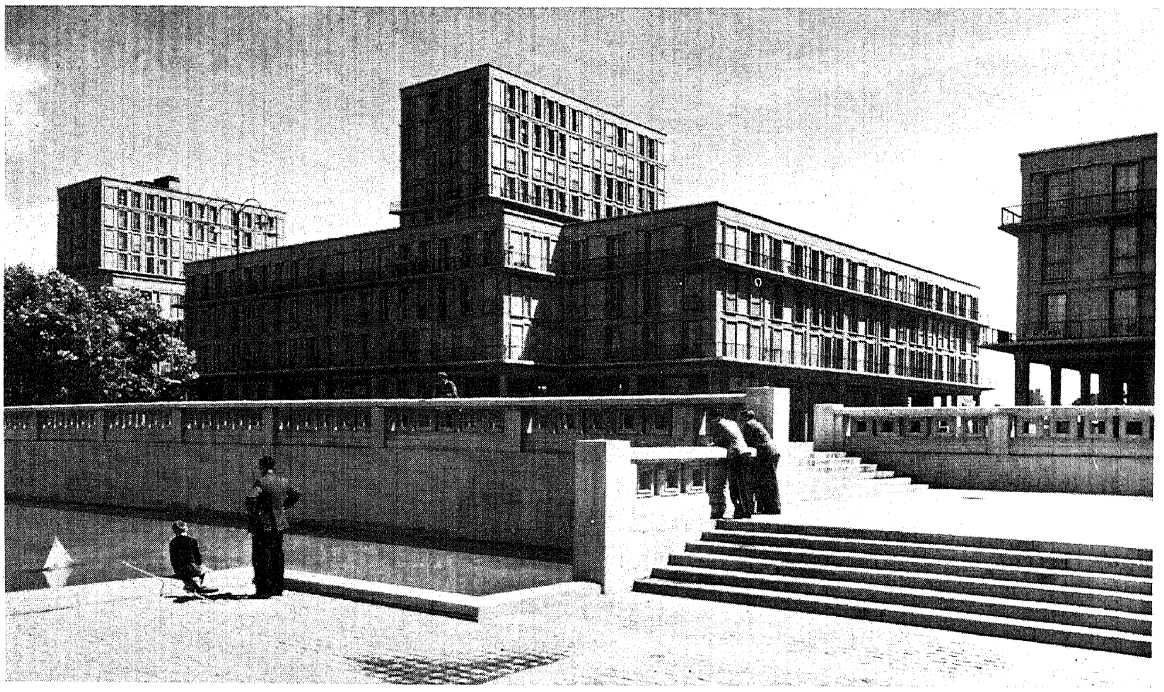


(B) Hector Guimard: Paris, Gare du Métropolitain, Place Bastille, *c.* 1900

(A) Otto Wagner: Vienna, Majolika Haus, *c.* 1898

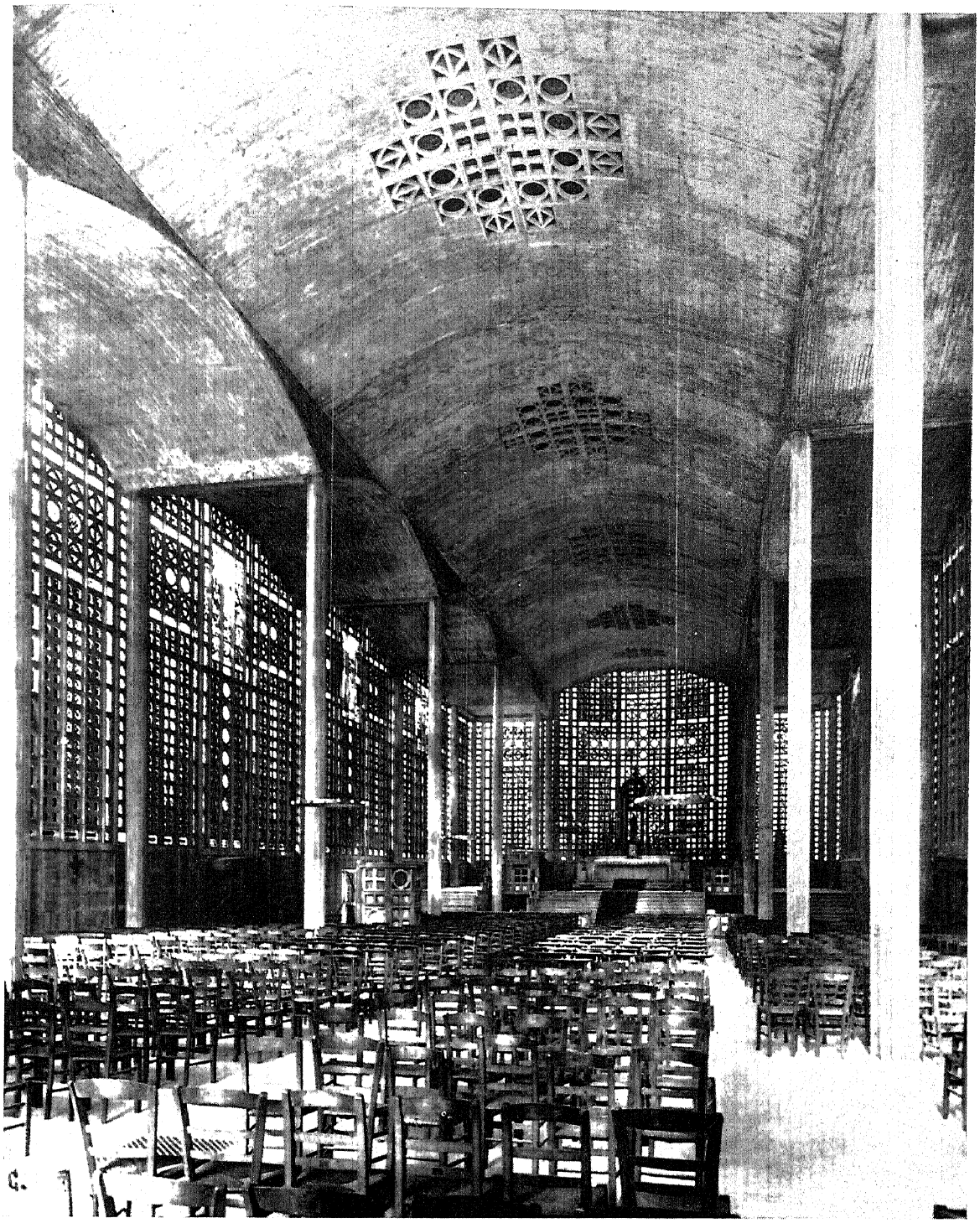


(B) H. P. Berlage: London, Holland House, 1914



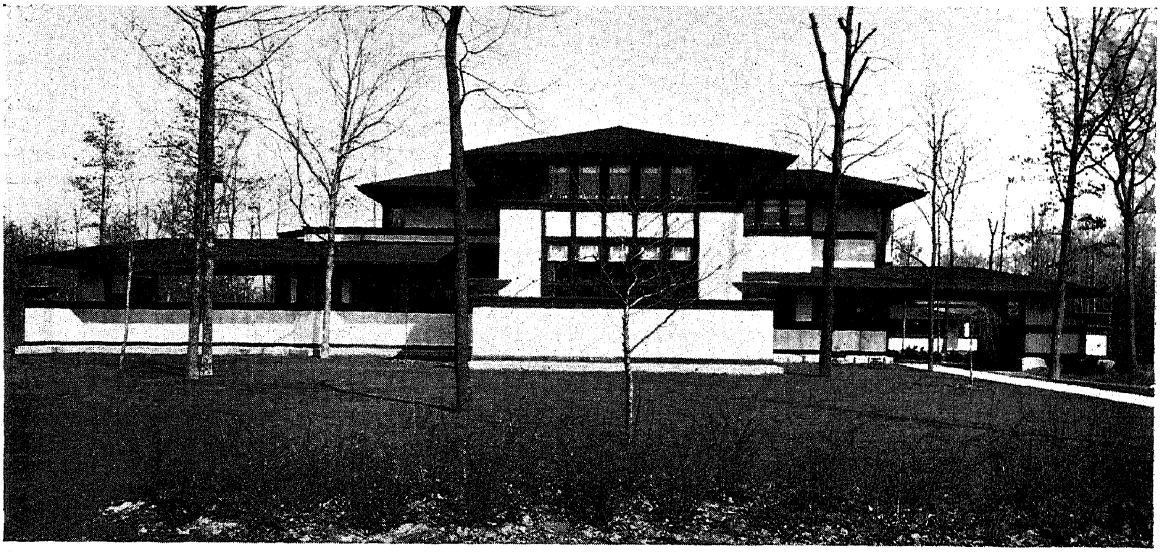
(A) Auguste Perret: Le Havre, Place de l'Hôtel de Ville, 1948–54

(B) Auguste Perret: Paris, Ministry of Marine, 1929–30

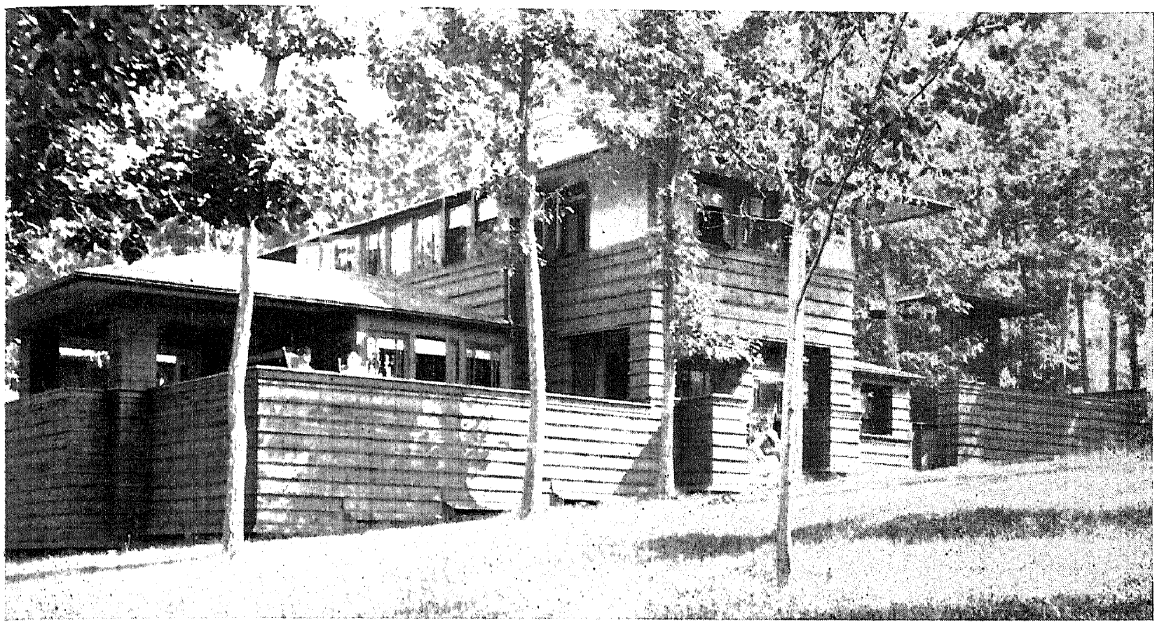


Auguste Perret: Le Raincy, S.-et-O., Notre-Dame, 1922–3

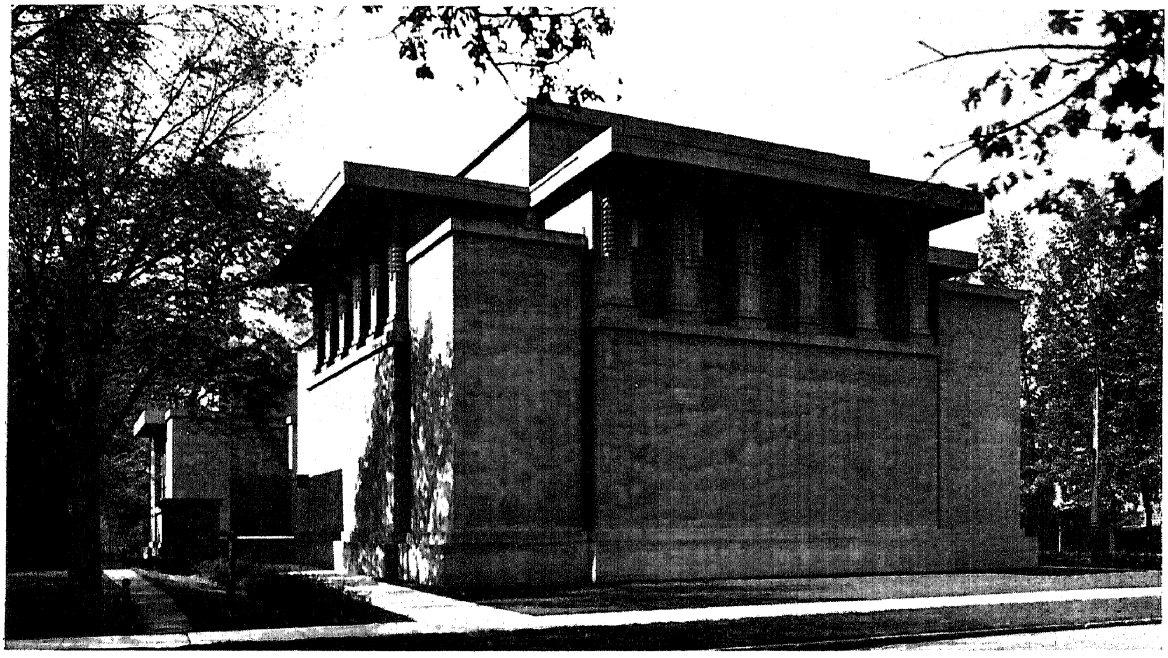
(A) Frank Lloyd Wright: Kankakee, Ill., Warren Hickox house, 1900



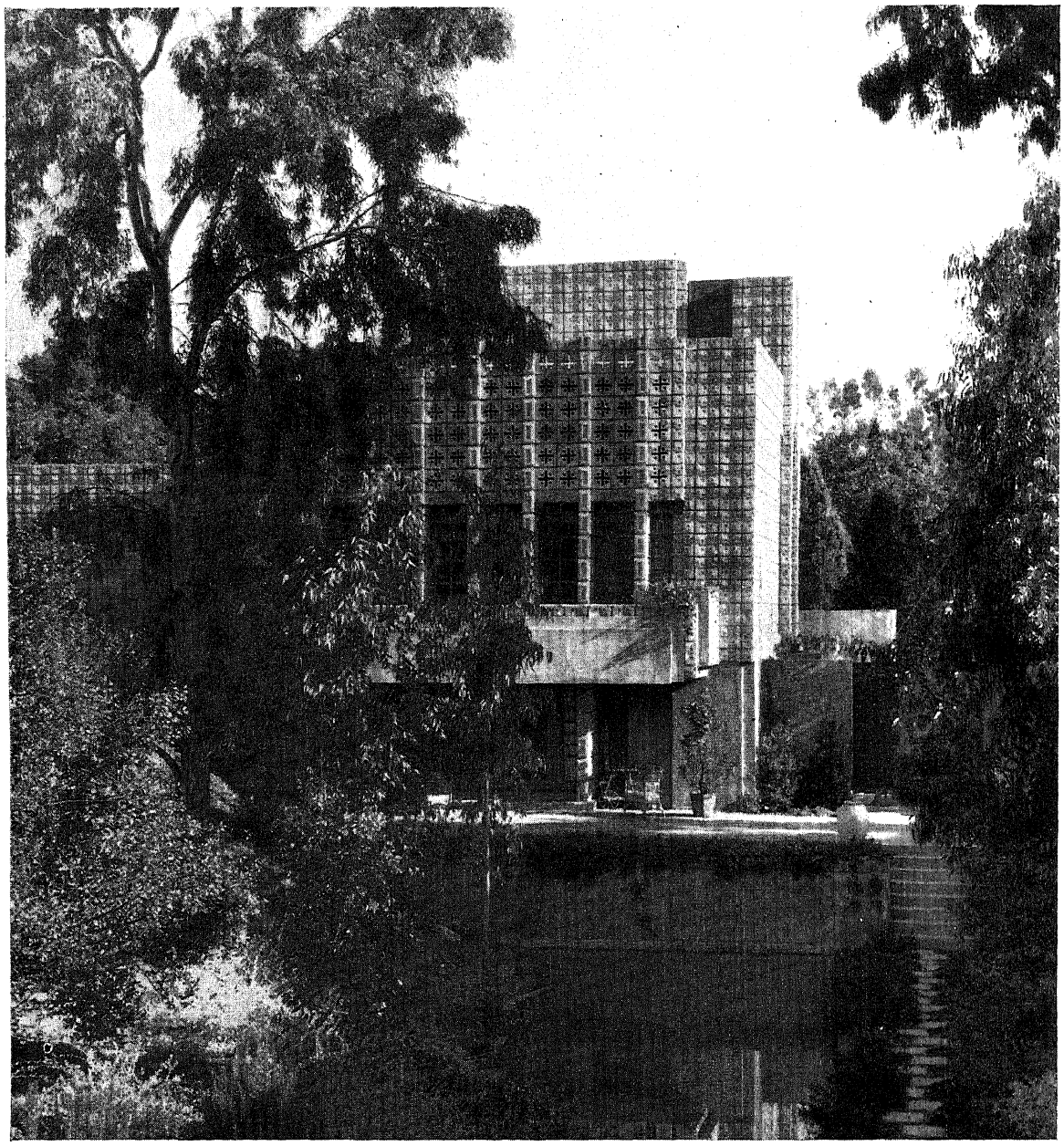
(B) Frank Lloyd Wright: Highland Park, Ill., W. W. Willitts house, 1902



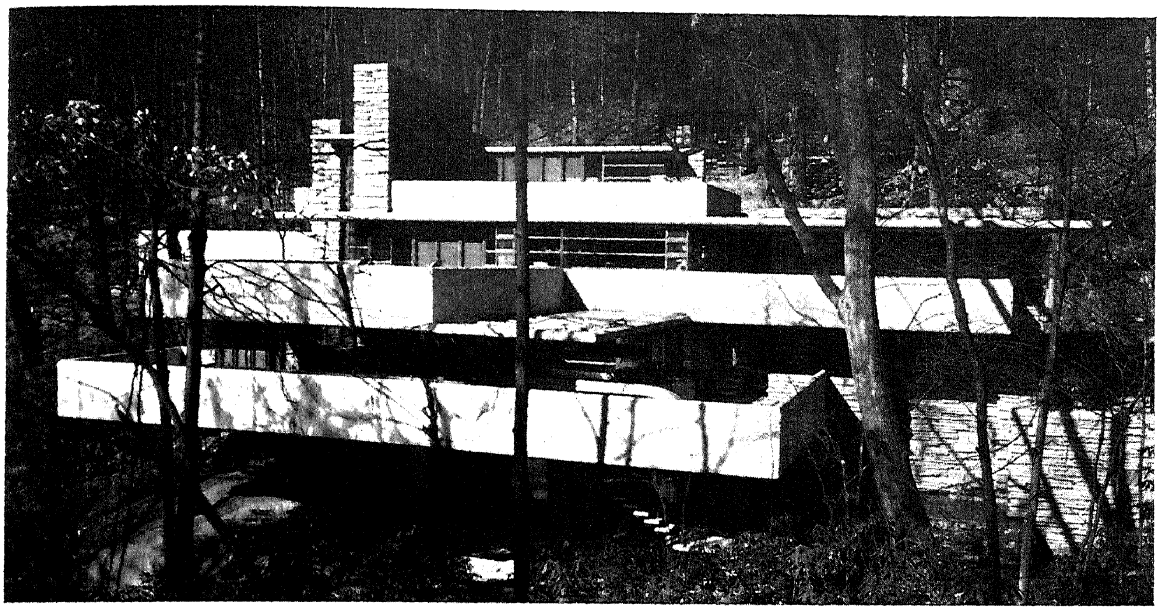
(A) Frank Lloyd Wright: Delavan Lake, Wis., C. S. Ross house, 1902



(B) Frank Lloyd Wright: Oak Park, Ill., Unity Church, 1906

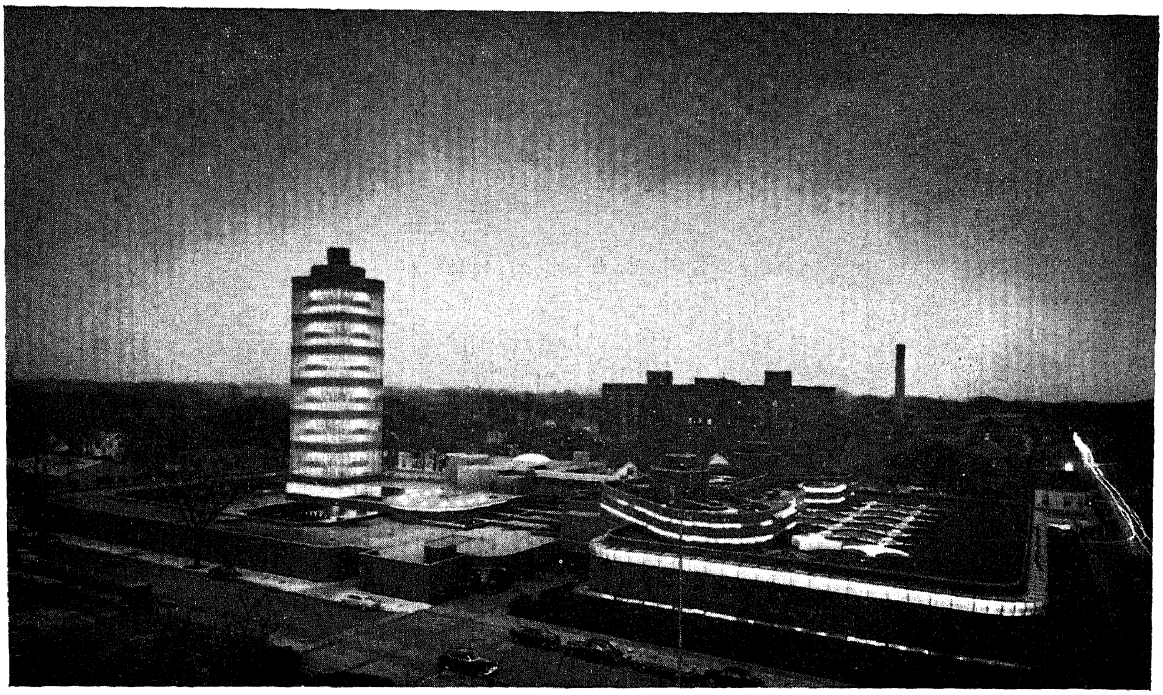


Frank Lloyd Wright: Pasadena, Cal., Mrs G. M. Millard house, 1923



(A) Frank Lloyd Wright: Falling Water, Pennsylvania, 1936–7

(B) Frank Lloyd Wright: Pleasantville, N.Y., Sol Friedman house, 1948–9



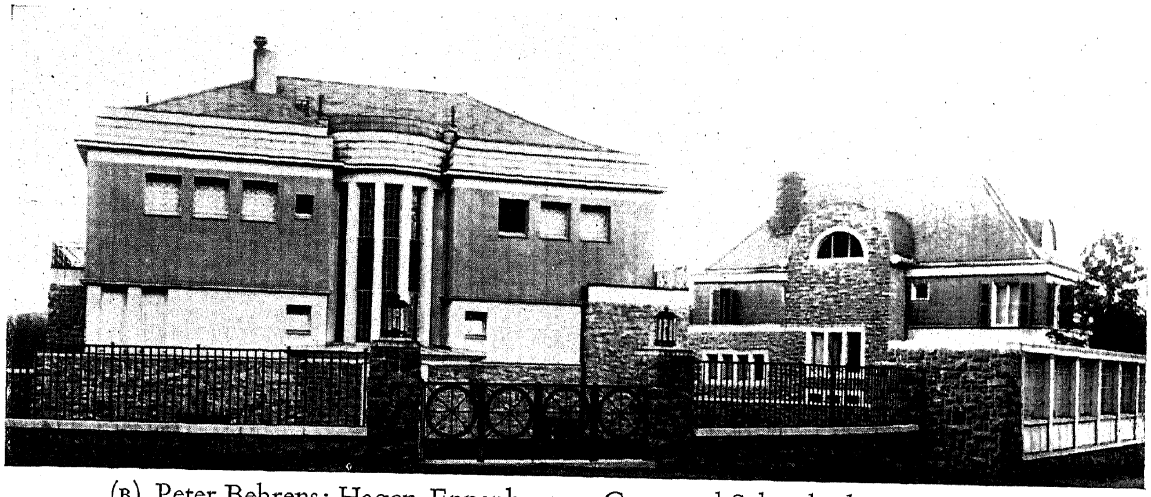
(A) Frank Lloyd Wright: Racine, Wis., S. C. Johnson and Sons Administration Building and Laboratory Tower, 1936–9 and 1946–9

(B) Bernard Maybeck: Berkeley, Cal., Christian Science Church, 1910

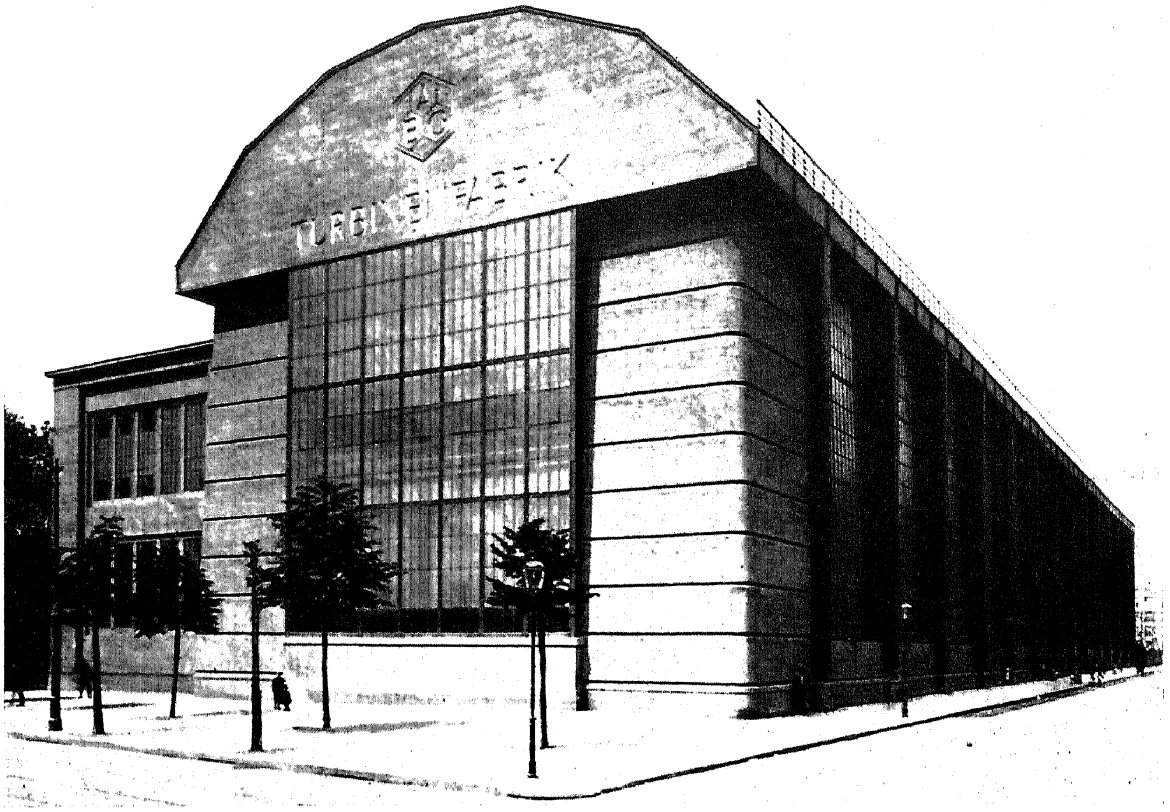
(A) Greene & Greene: Pasadena, Cal., D. B. Gamble house, 1908–9

(B) Irving Gill: Los Angeles, Walter Dodge house, 1915–16

(A) Peter Behrens: Berlin, A.E.G. Small Motors Factory, 1910



(B) Peter Behrens: Hagen-Eppenhausen, Cuno and Schröder houses, 1909–10



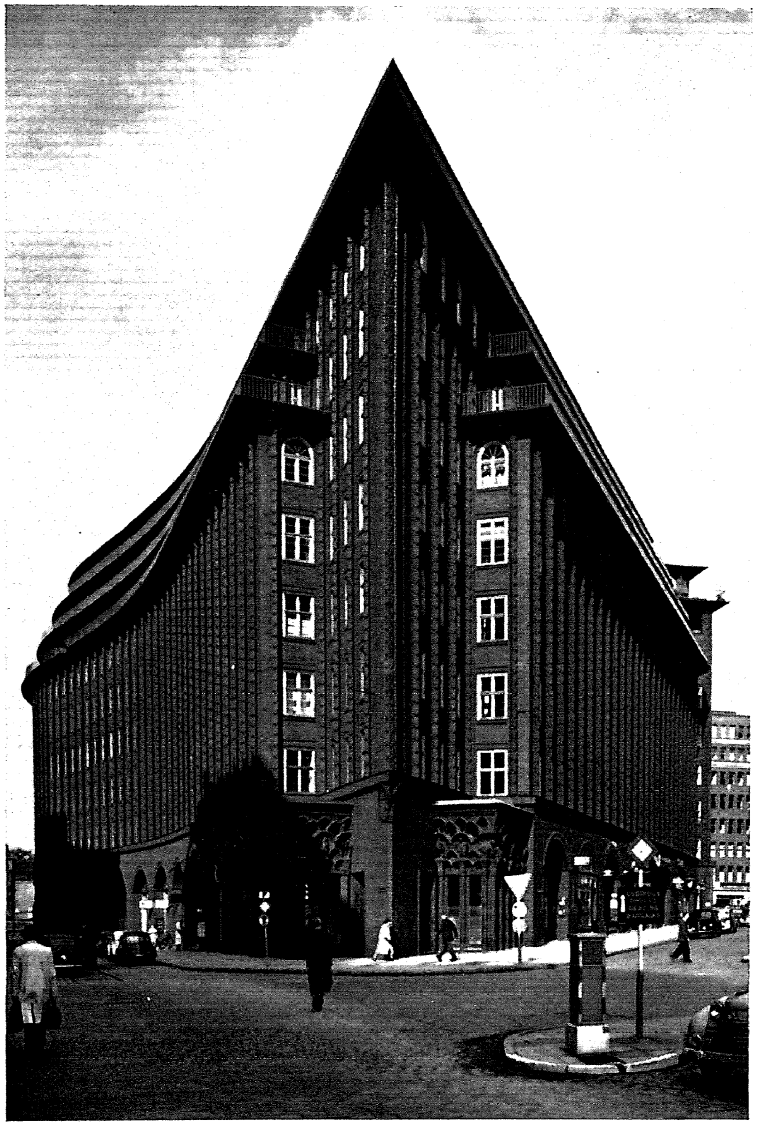
(A) Peter Behrens: Berlin, A.E.G. Turbine Factory, 1909

(B) Max Berg: Breslau, Jahrhunderthalle, 1910–12

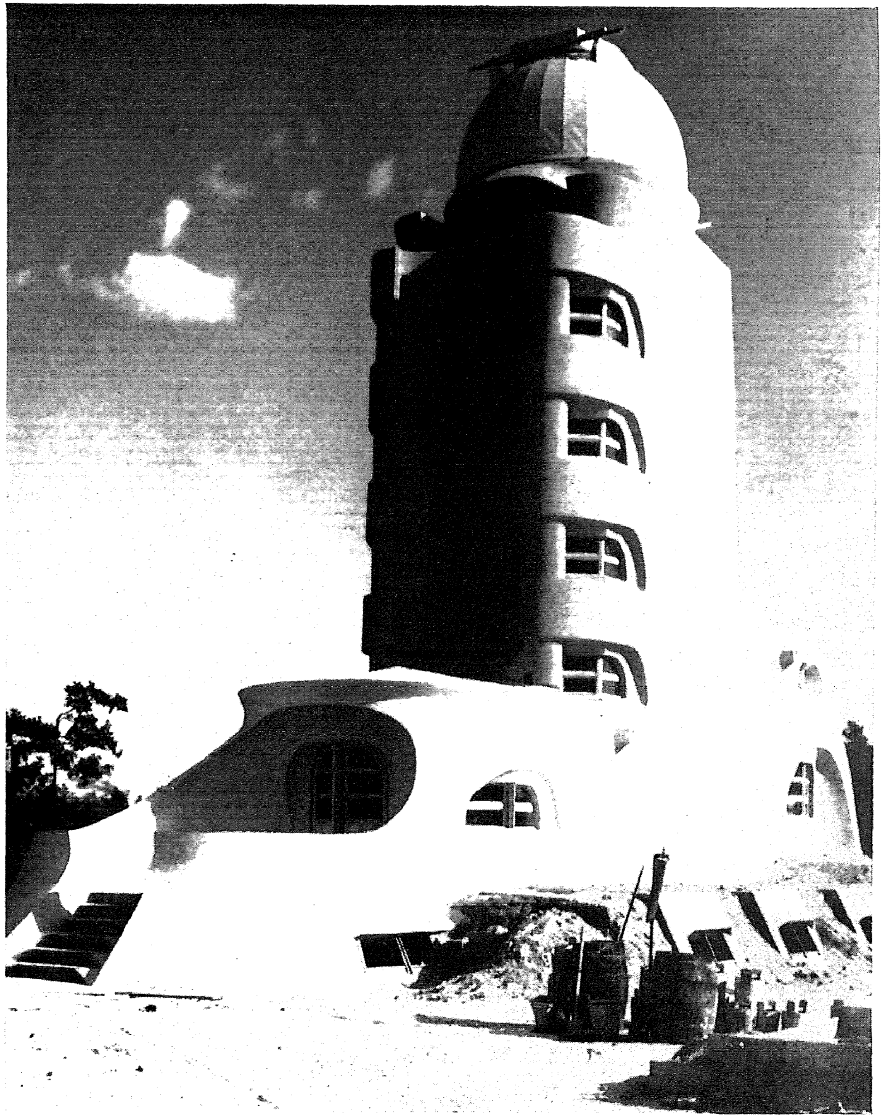
H. P. Berlage: Amsterdam, Diamond Workers' Union Building, 1899–1900

Adolf Loos: Vienna, Kärntner Bar, 1907

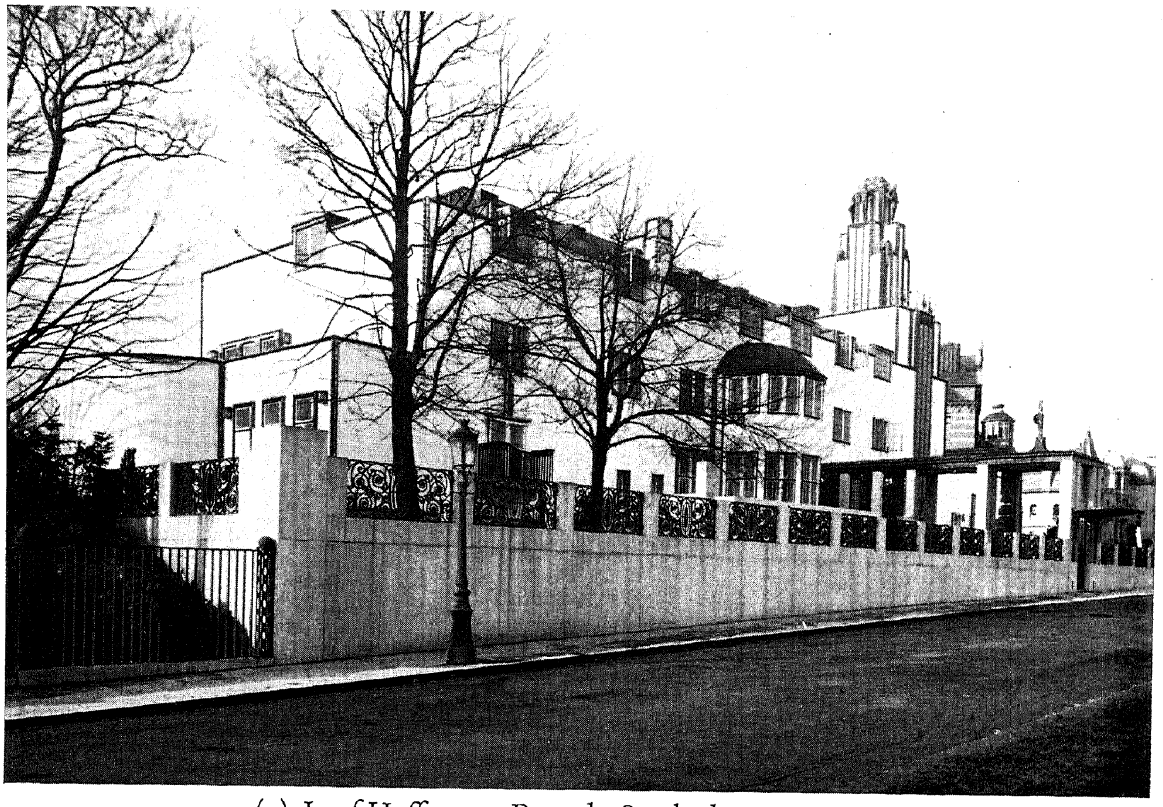
Bonatz & Scholer: Stuttgart, Railway Station, 1911–14, 1919–27



(A) Fritz Höger: Hamburg, Chilehaus, 1923

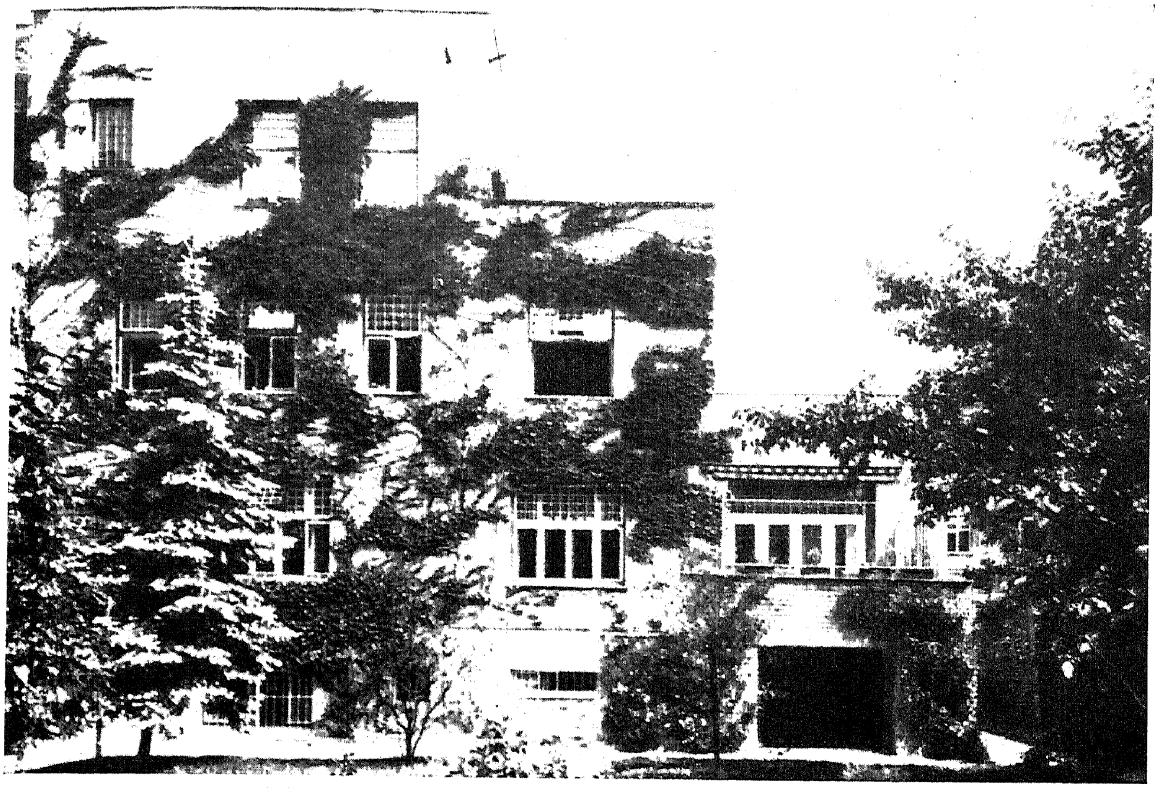


(B) Erich Mendelsohn: Neubabelsberg, Einstein Tower, 1921



(A) Josef Hoffmann: Brussels, Stoclet house, 1905–11

(B) Otto Wagner: Vienna, Postal Savings Bank, 1904–6

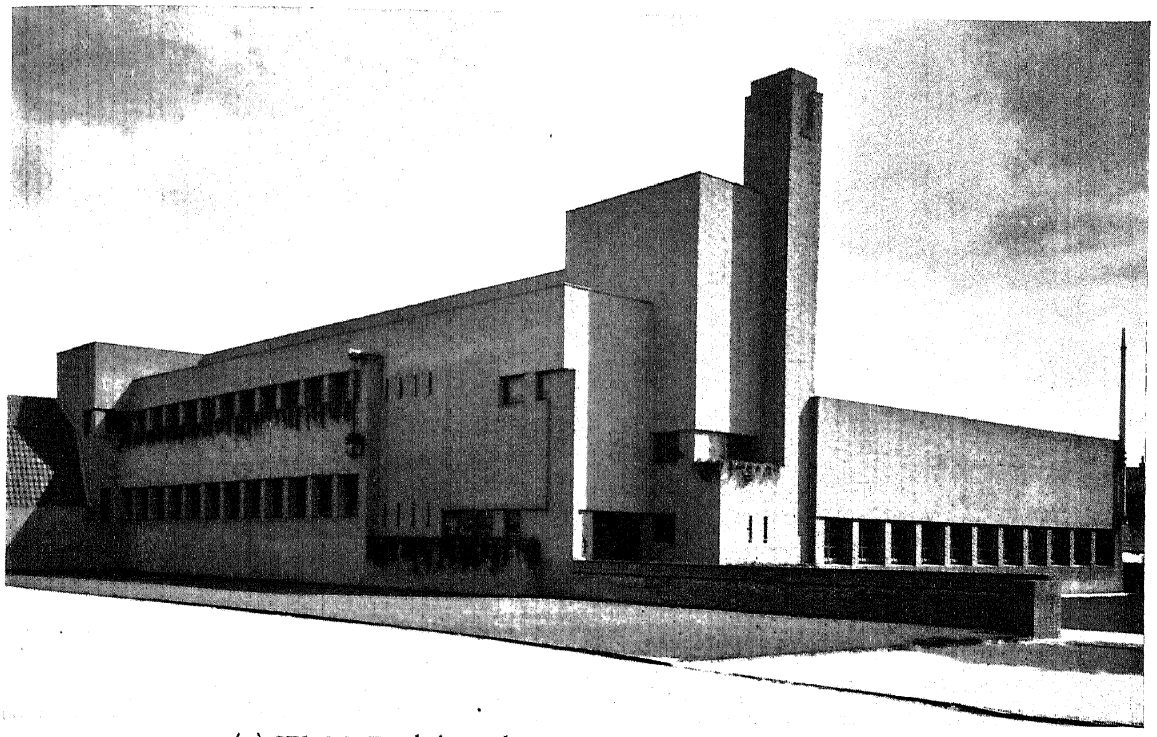


(A) Adolf Loos: Vienna, Gustav Scheu house, 1912

(B) Adolf Loos: Vienna, Leopold Langer flat, 1901

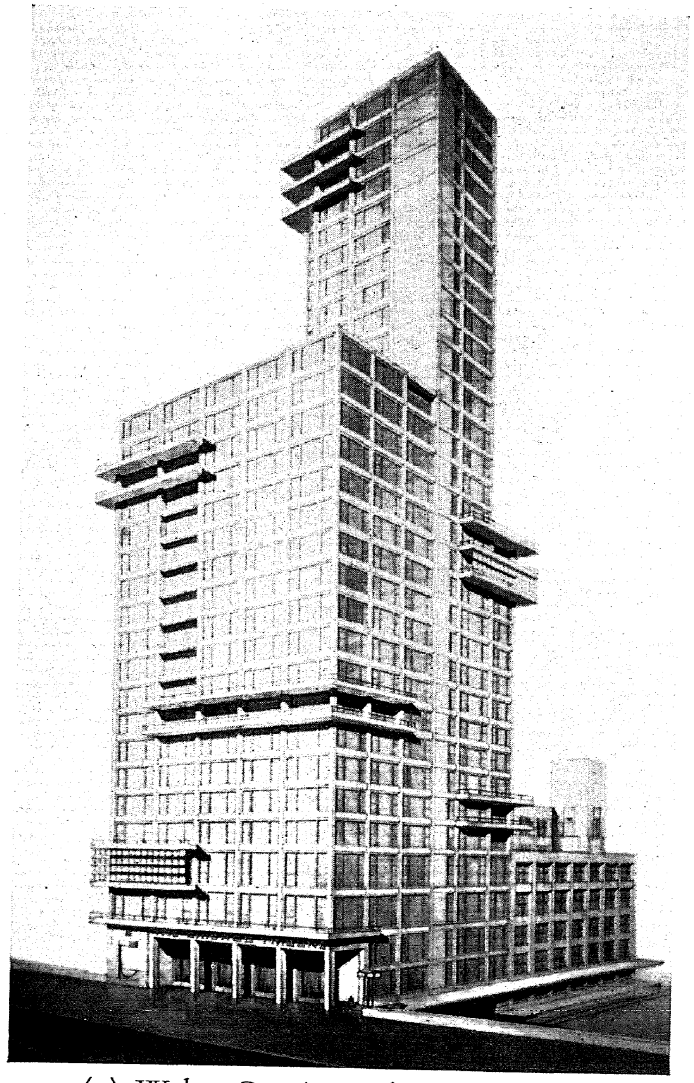
(A) Piet Kramer: Amsterdam, De Dageraad housing estate, 1918–23

(B) Michael de Klerk: Amsterdam, Eigen Haard housing estate, 1917

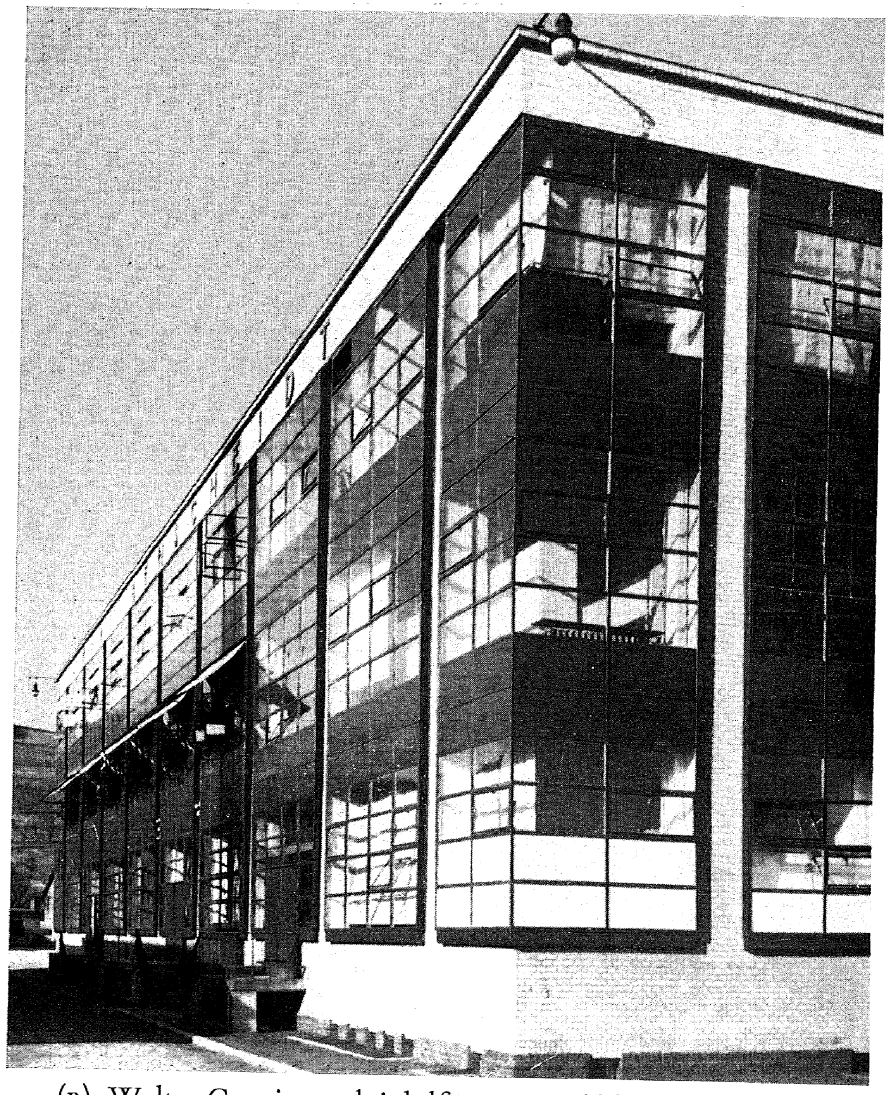


(A) W. M. Dudok: Hilversum, Dr Bavinck School, 1921

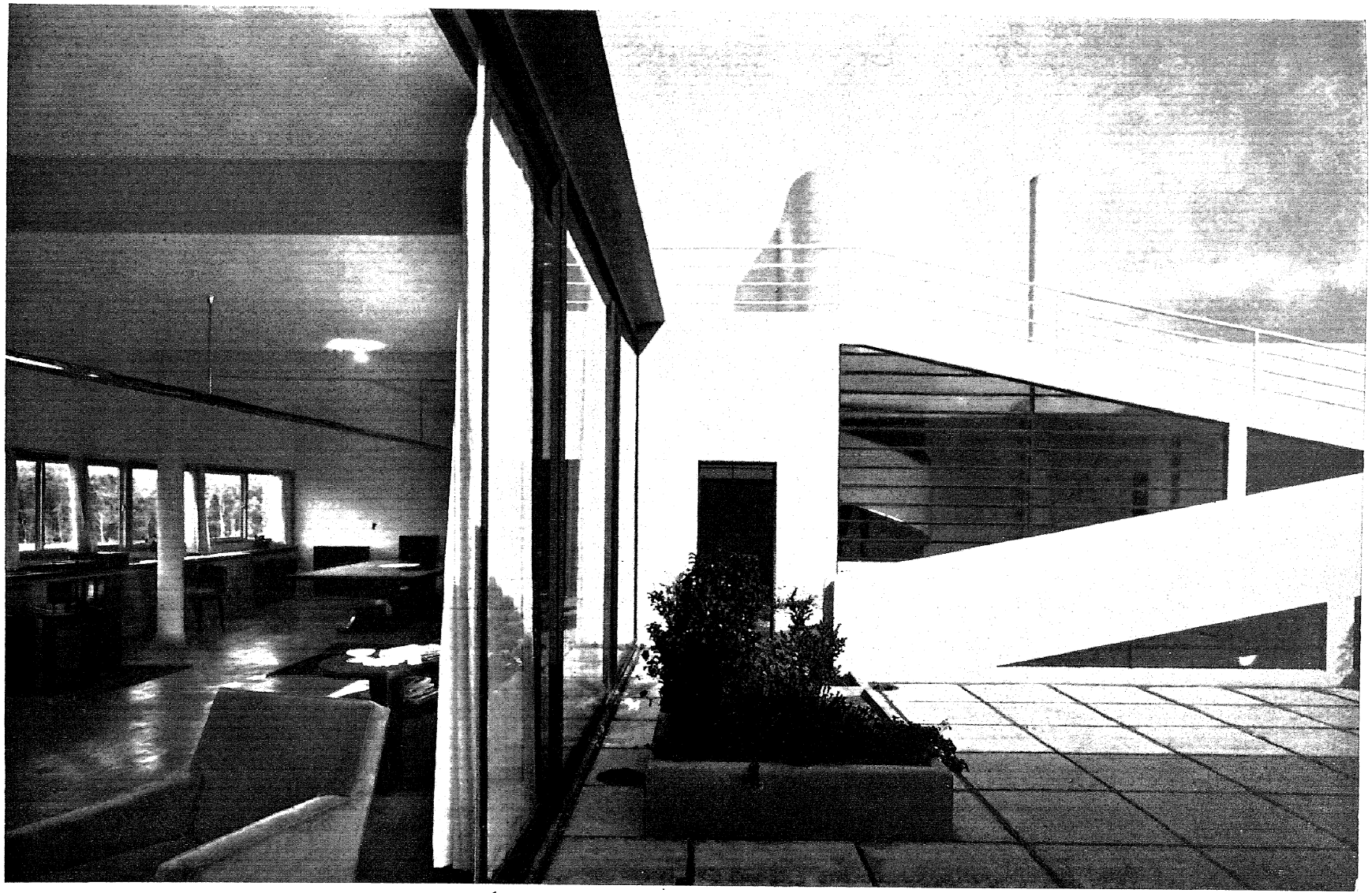
(B) Saarinen & Saarinen: Minneapolis, Minn., Christ Lutheran Church, 1949–50



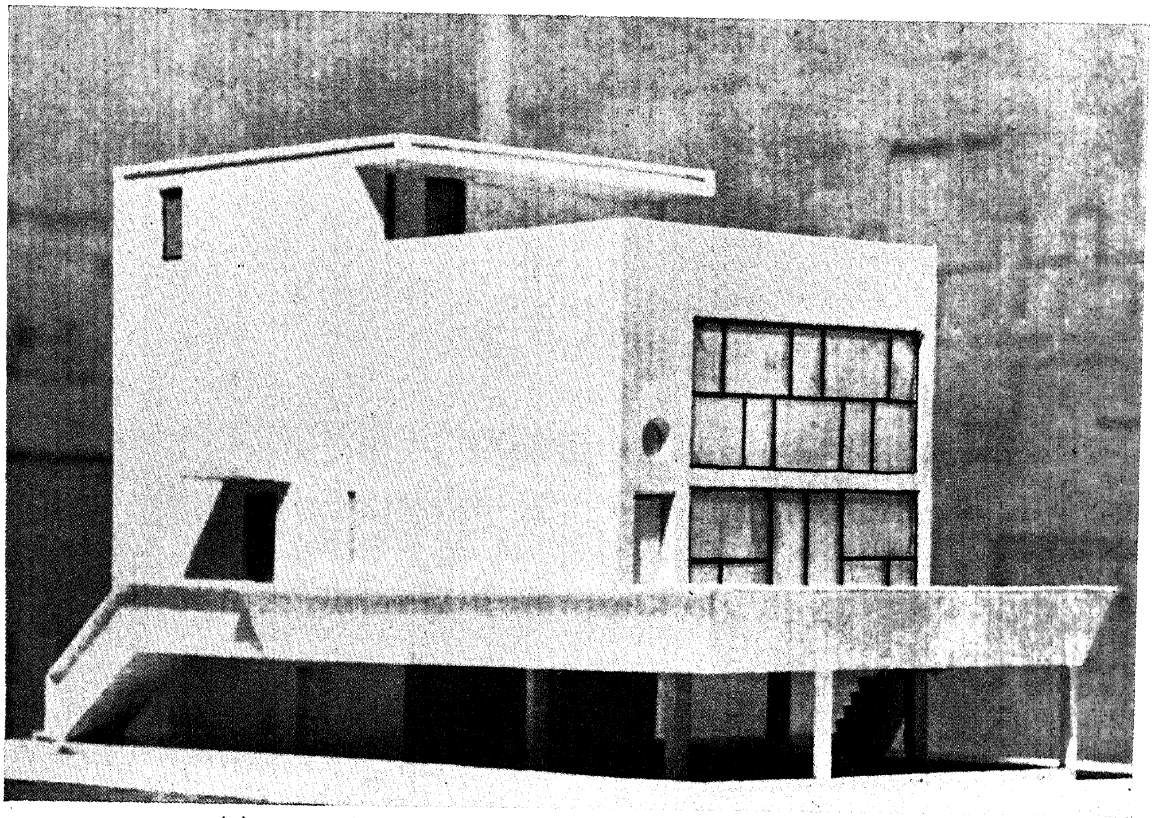
(A) Walter Gropius with Adolf Meyer:
Project for Chicago Tribune Tower, 1922



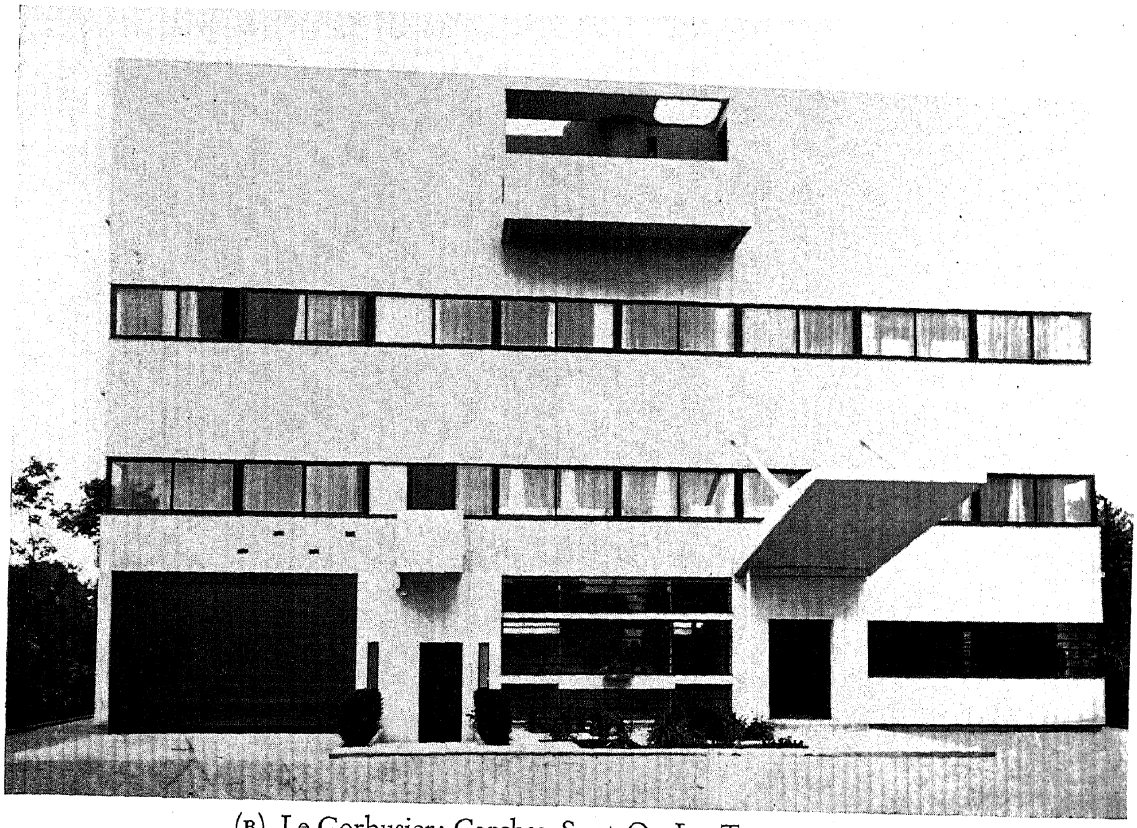
(B) Walter Gropius and Adolf Meyer: Alfeld-an-der-Leine,
Fagus Factory, 1911–14



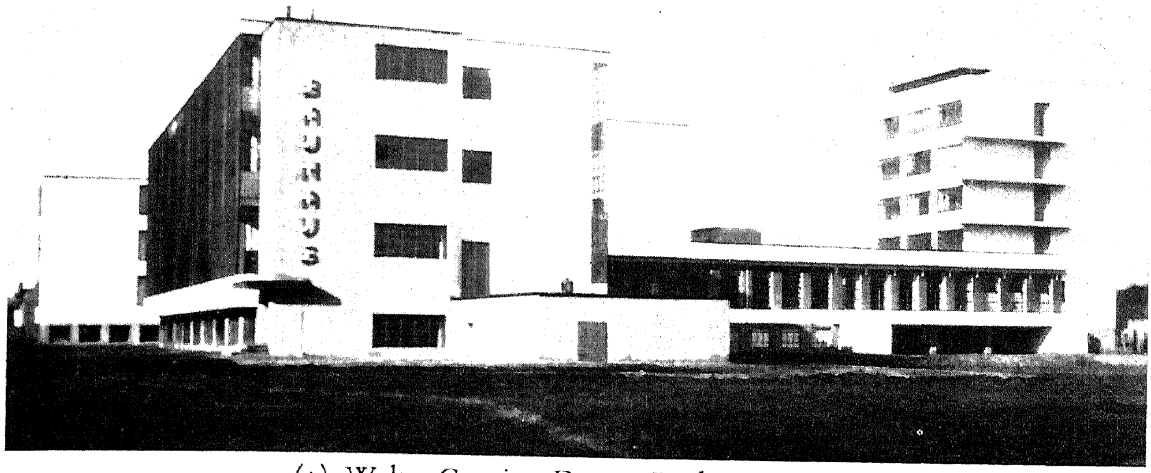
Le Corbusier: Poissy, S.-et-O., Savoye house, 1929–30



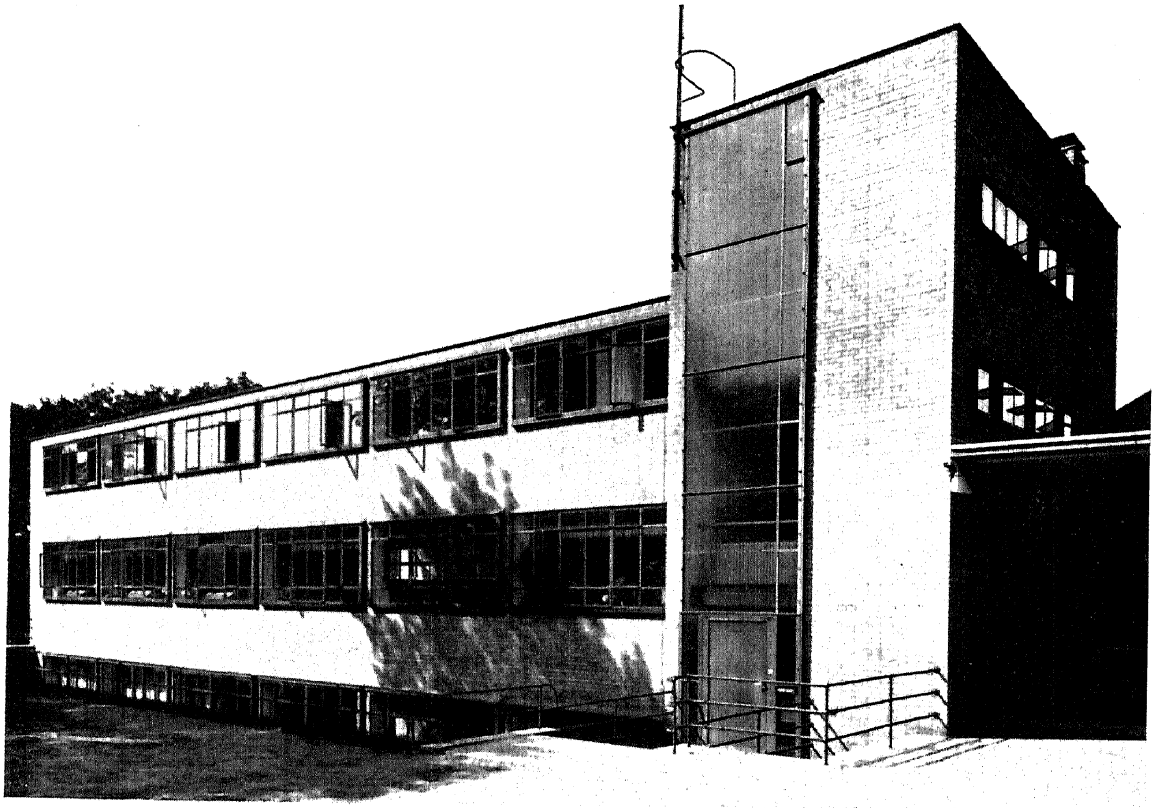
(A) Le Corbusier: Second project for Citrohan house, 1922



(B) Le Corbusier: Garches, S.-et-O., Les Terrasses, 1927

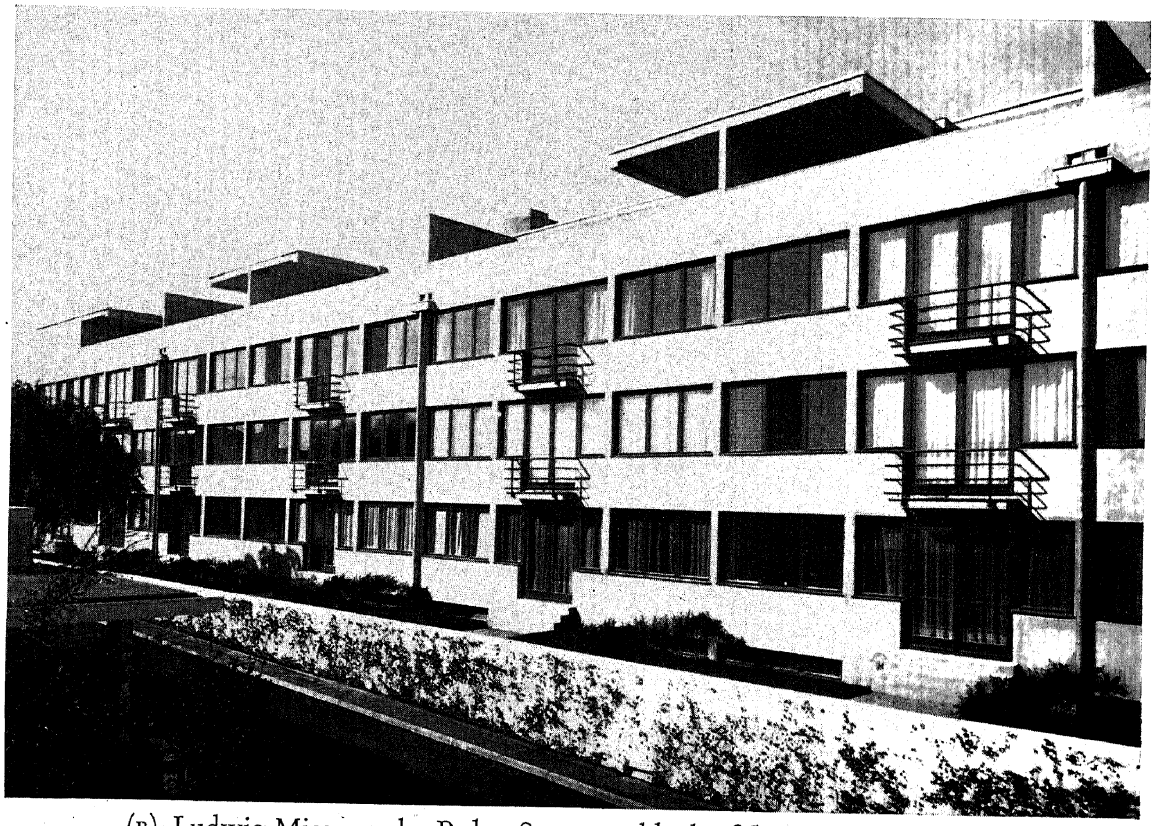


(A) Walter Gropius: Dessau, Bauhaus, 1925–6



(B) Walter Gropius: Dessau, City Employment Office, 1927–8

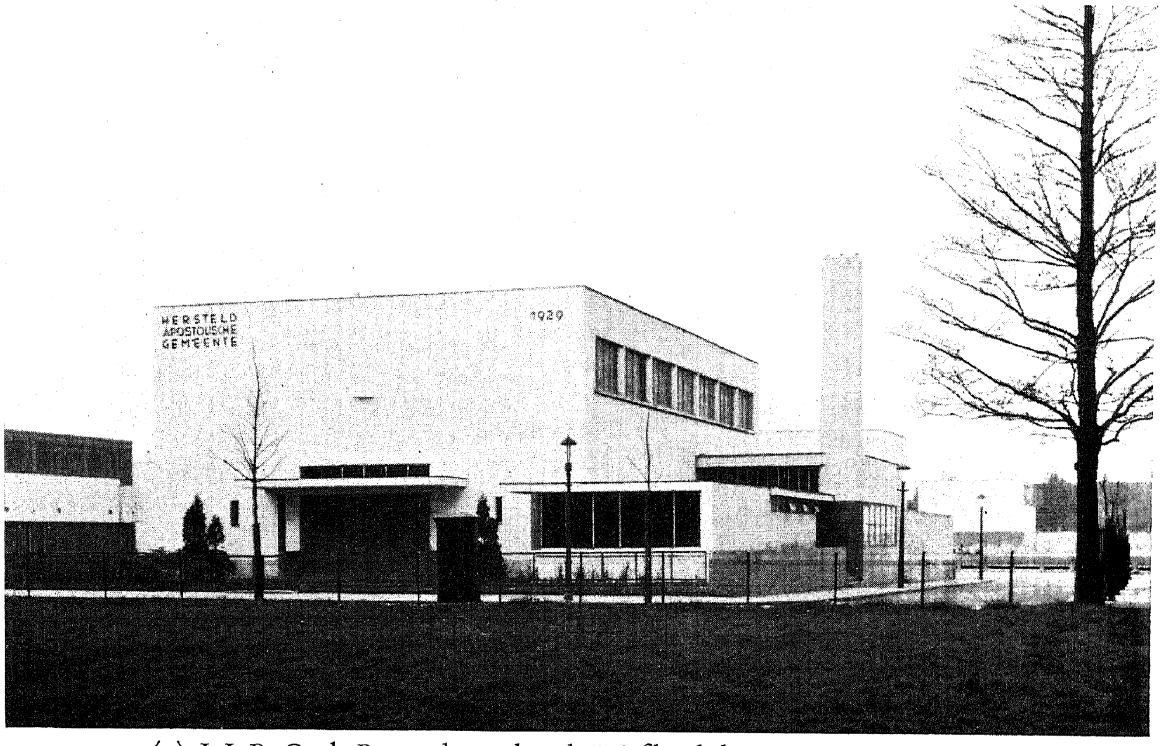
(A) Walter Gropius: Berlin, Siemenstadt housing estate, 1929–30



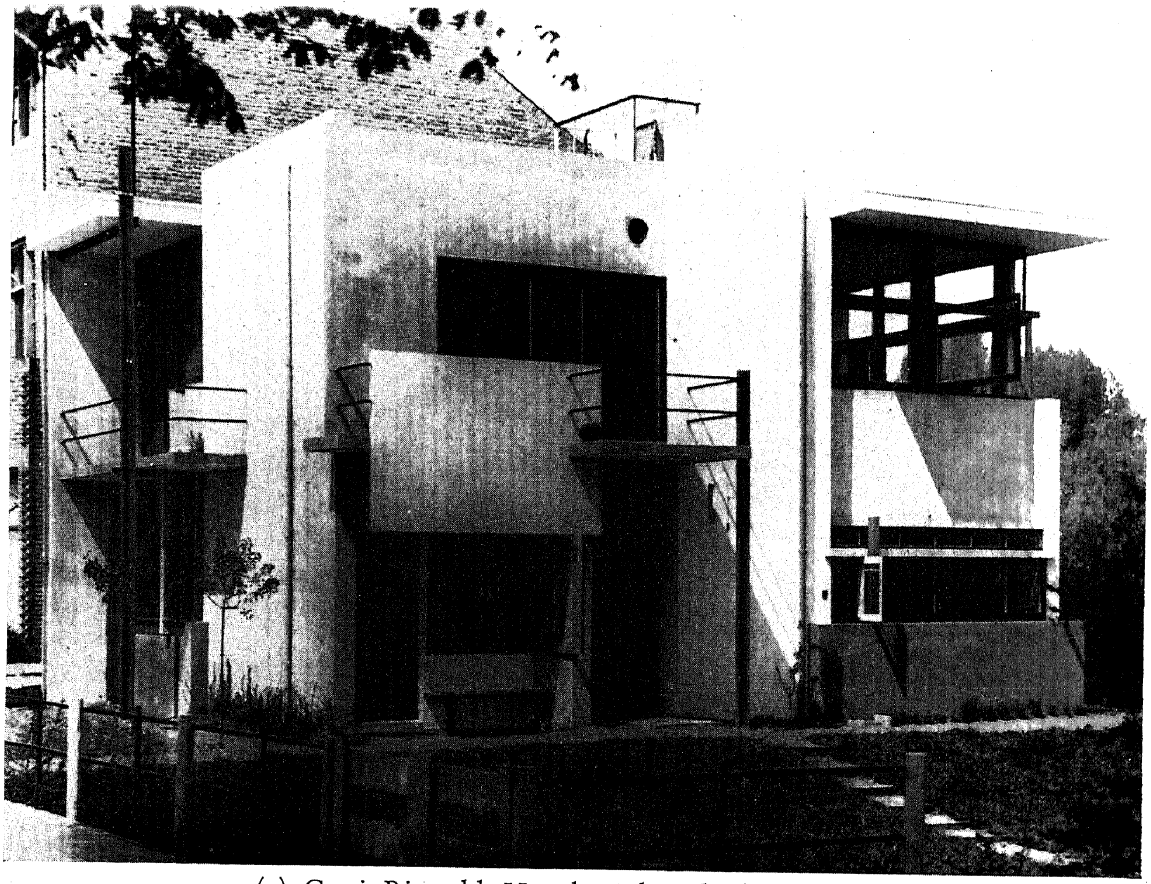
(B) Ludwig Mies van der Rohe: Stuttgart, block of flats, Weissenhof, 1927

(A) Brinkman & van der Vlugt: Rotterdam, van Nelle Factory, 1927

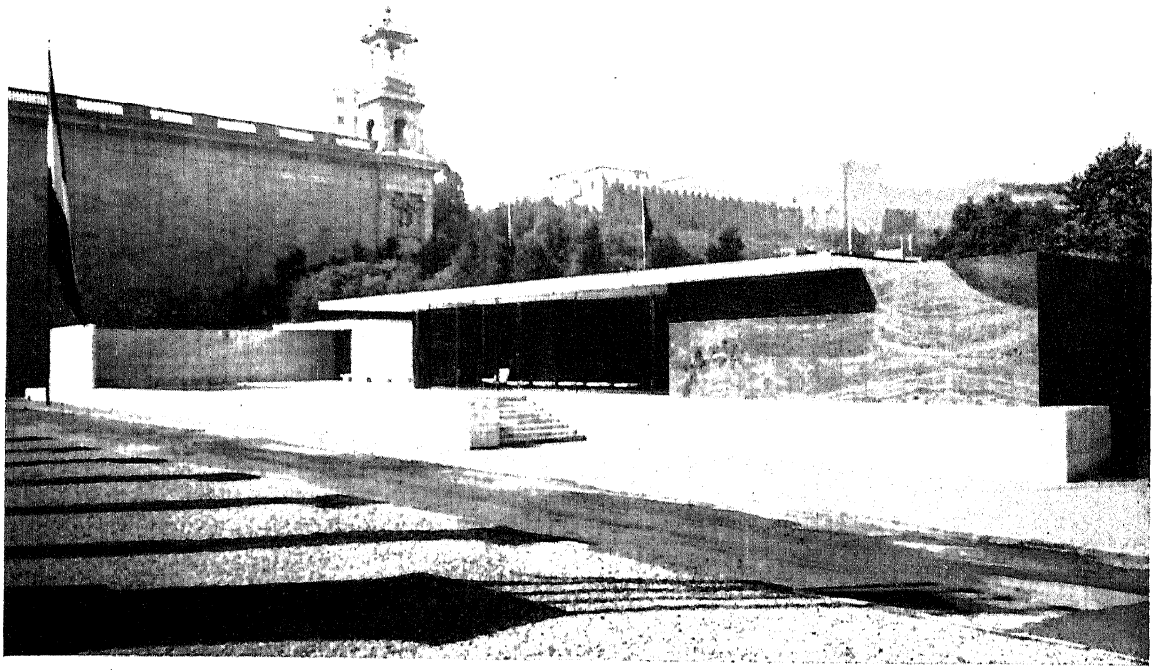
(B) J. J. P. Oud: Hook of Holland, housing estate, 1926–7



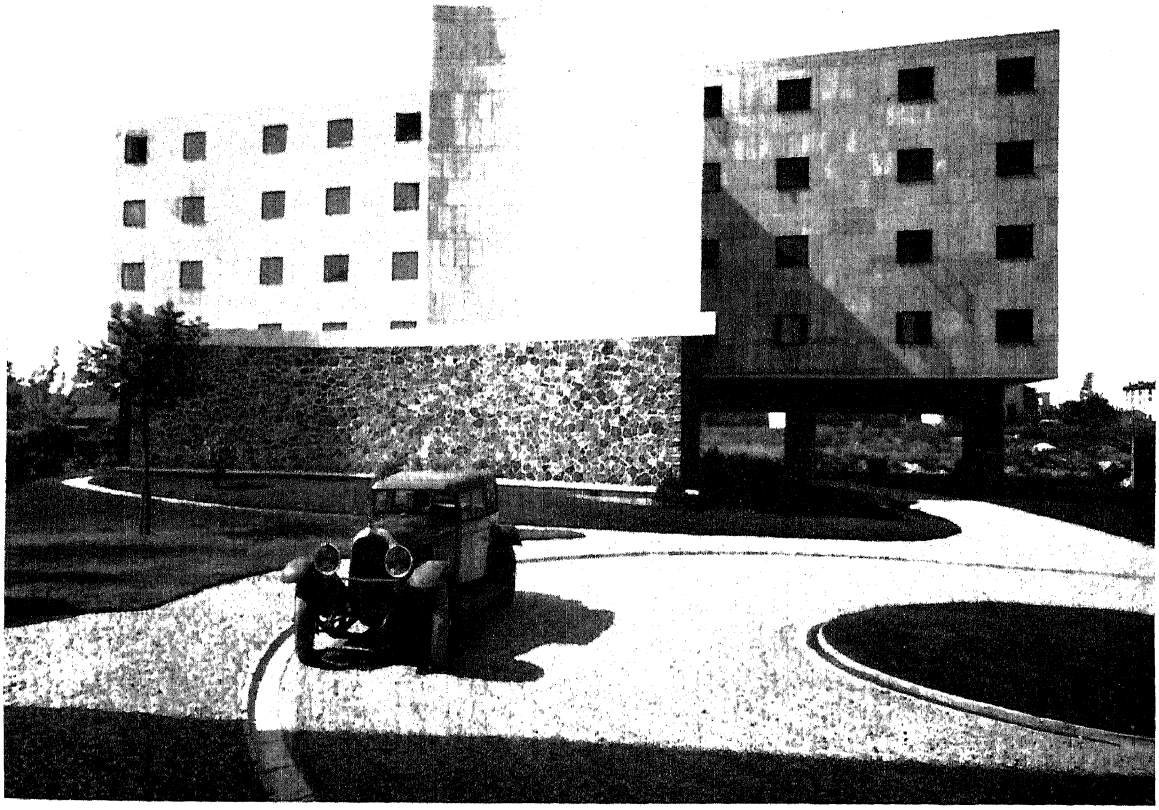
(A) J. J. P. Oud: Rotterdam, church, Kiefhoek housing estate, 1928–30



(B) Gerrit Rietveld: Utrecht, Schroeder house, 1925

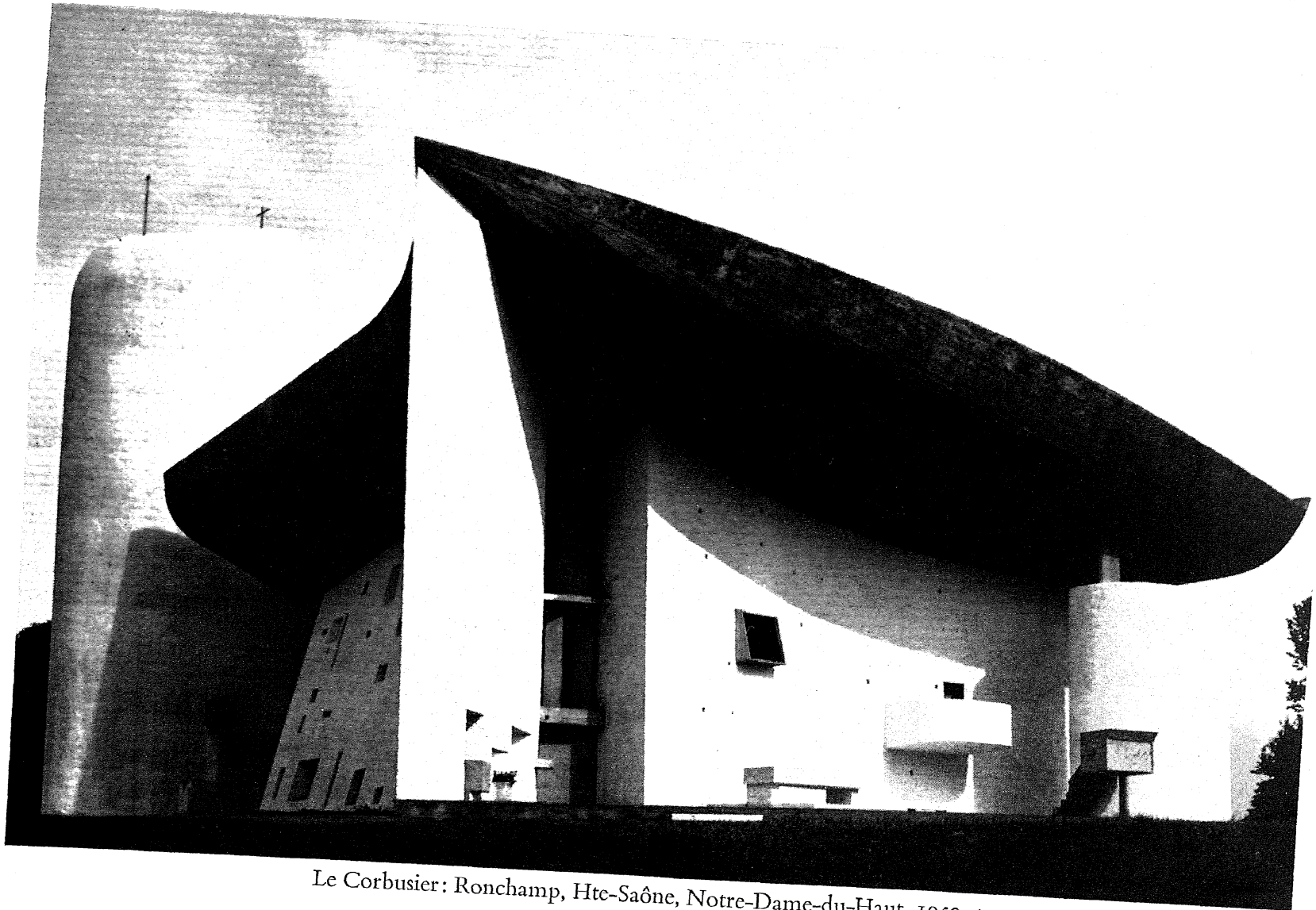


(A) Ludwig Mies van der Rohe: Barcelona, German Exhibition Pavilion, 1929

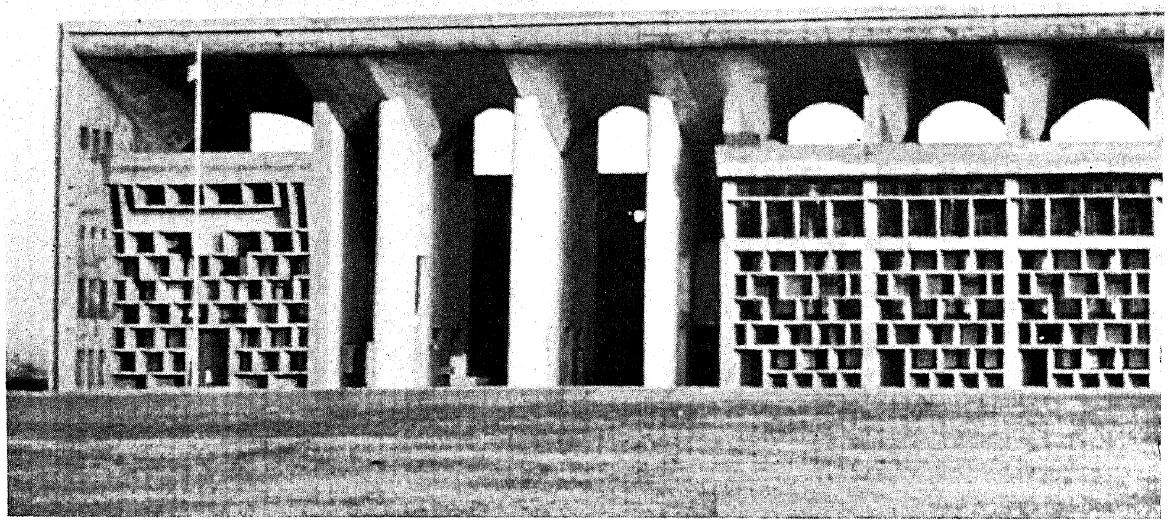


(B) Le Corbusier: Paris, Swiss Hostel, Cité Universitaire, 1931–2

Le Corbusier: Marseilles, Unité d'Habitation, 1946–52

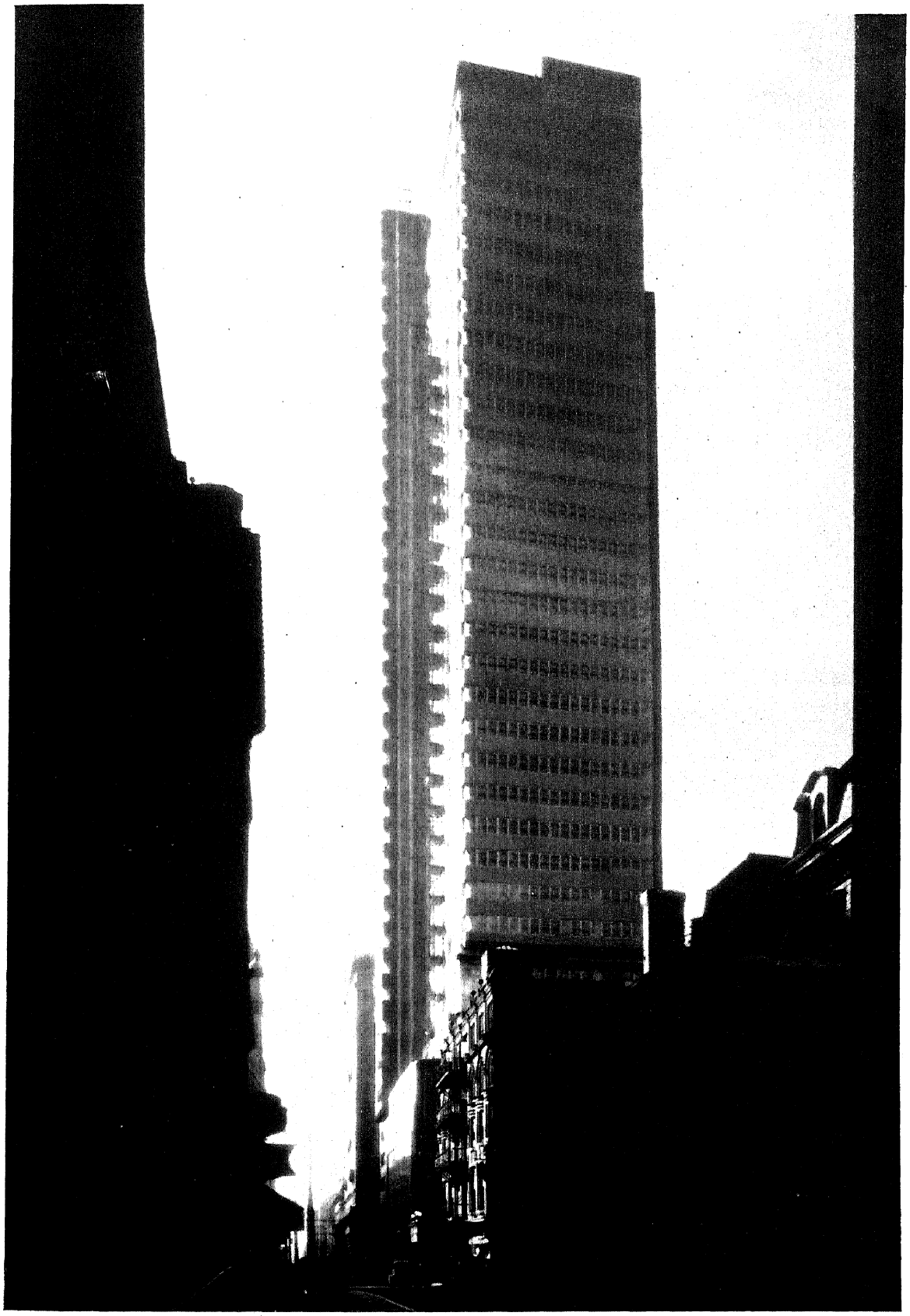


Le Corbusier: Ronchamp, Hte-Saône, Notre-Dame-du-Haut, 1950–4

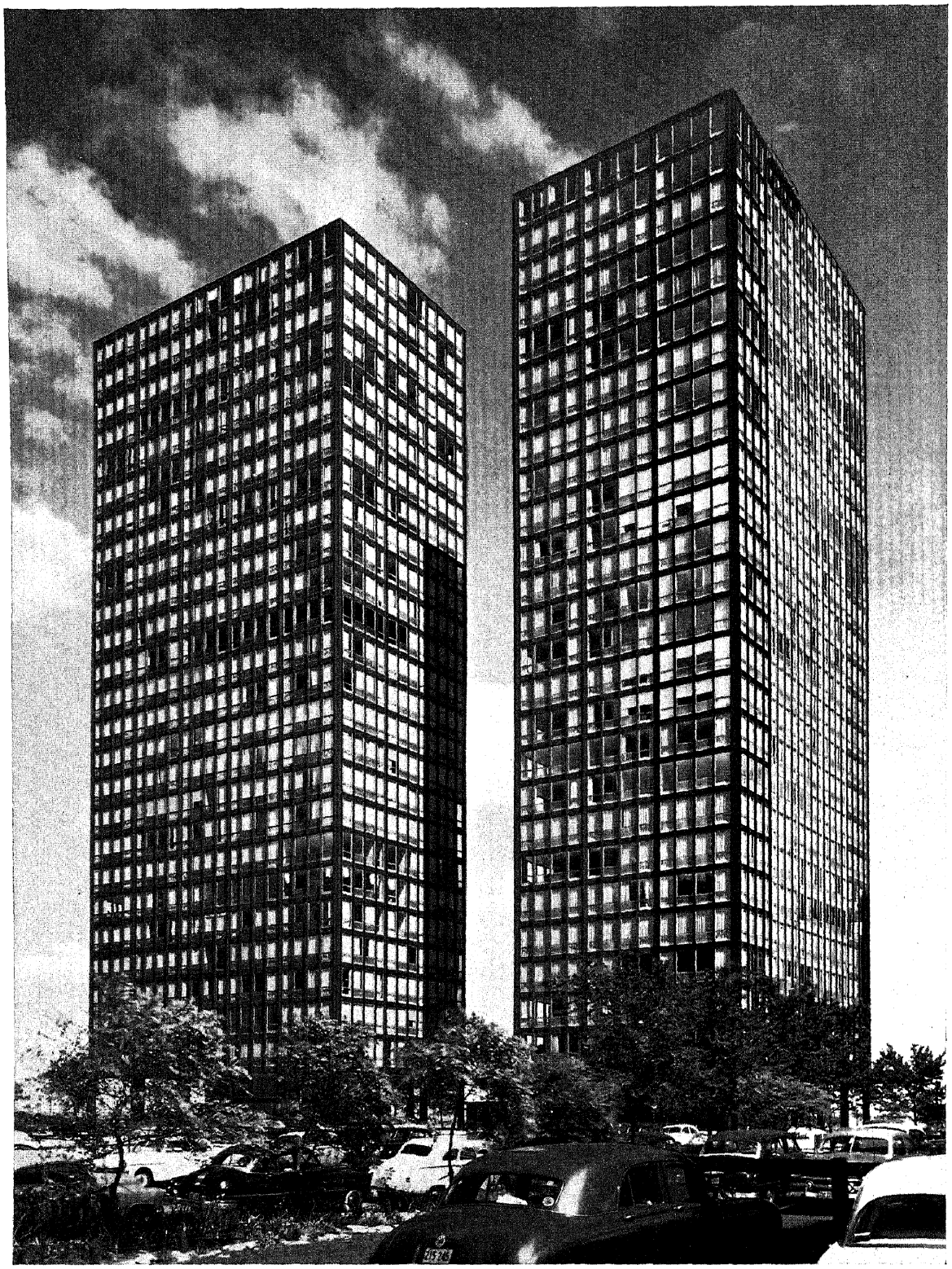


(A) Le Corbusier: Chandigarh, High Courts, 1952–6

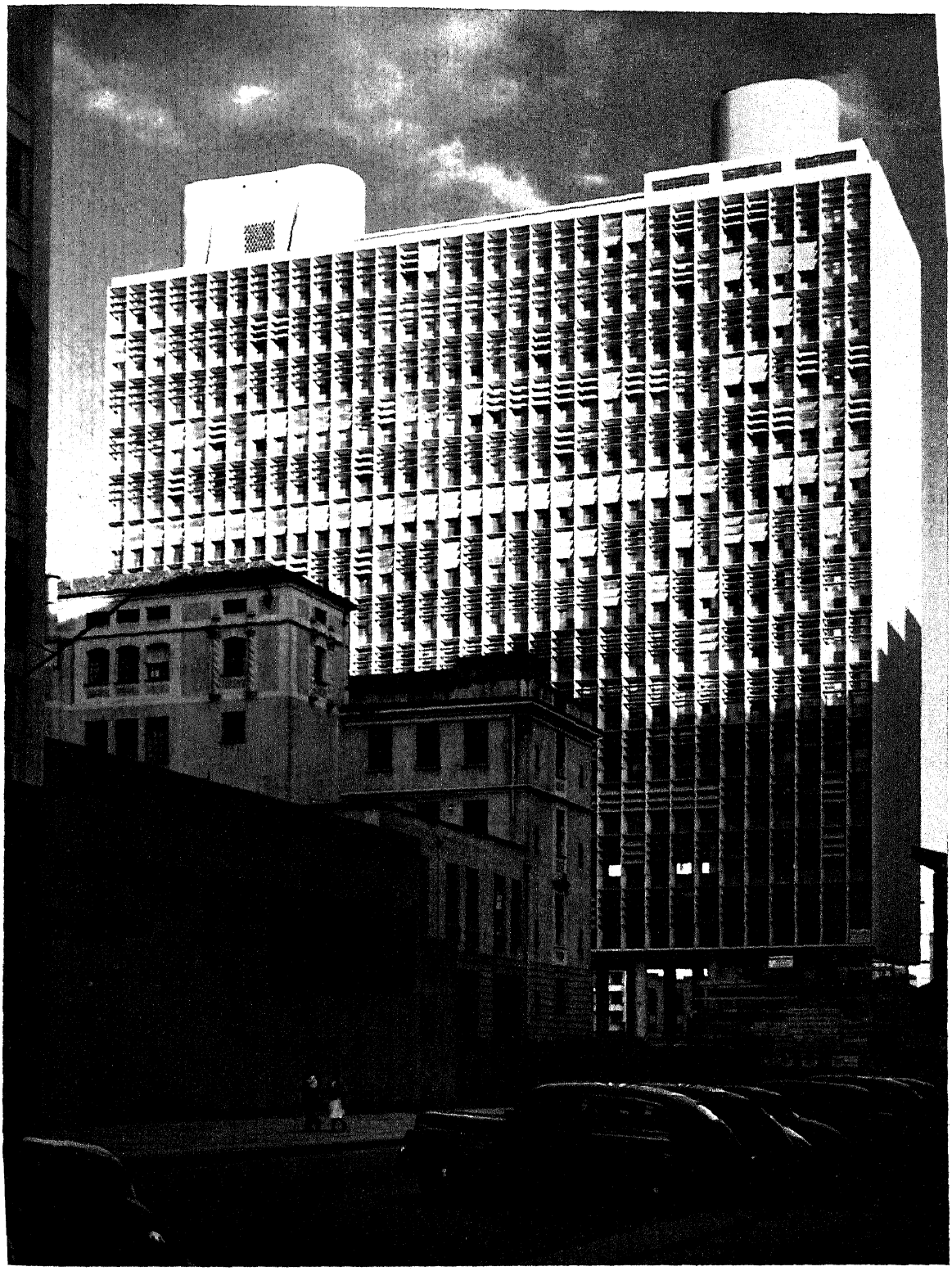
(B) The Architects' Cooperative: Attleborough, Mass., High School, 1948



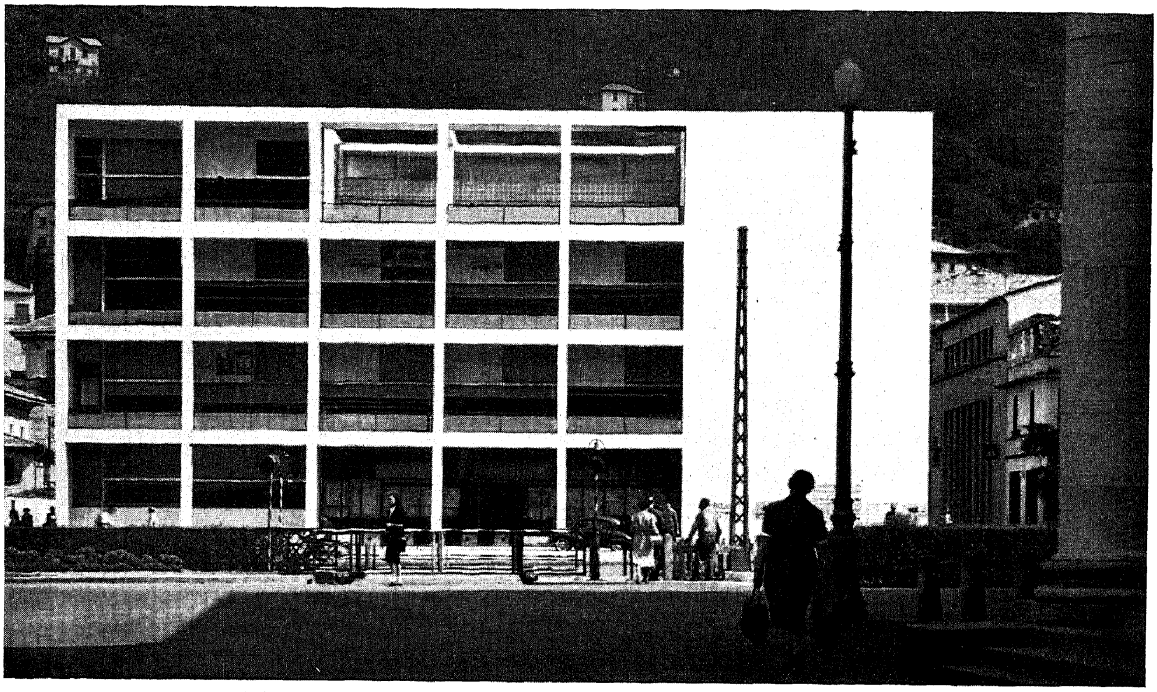
Howe & Lescaze: Philadelphia, Philadelphia Savings Fund Society Building, 1932



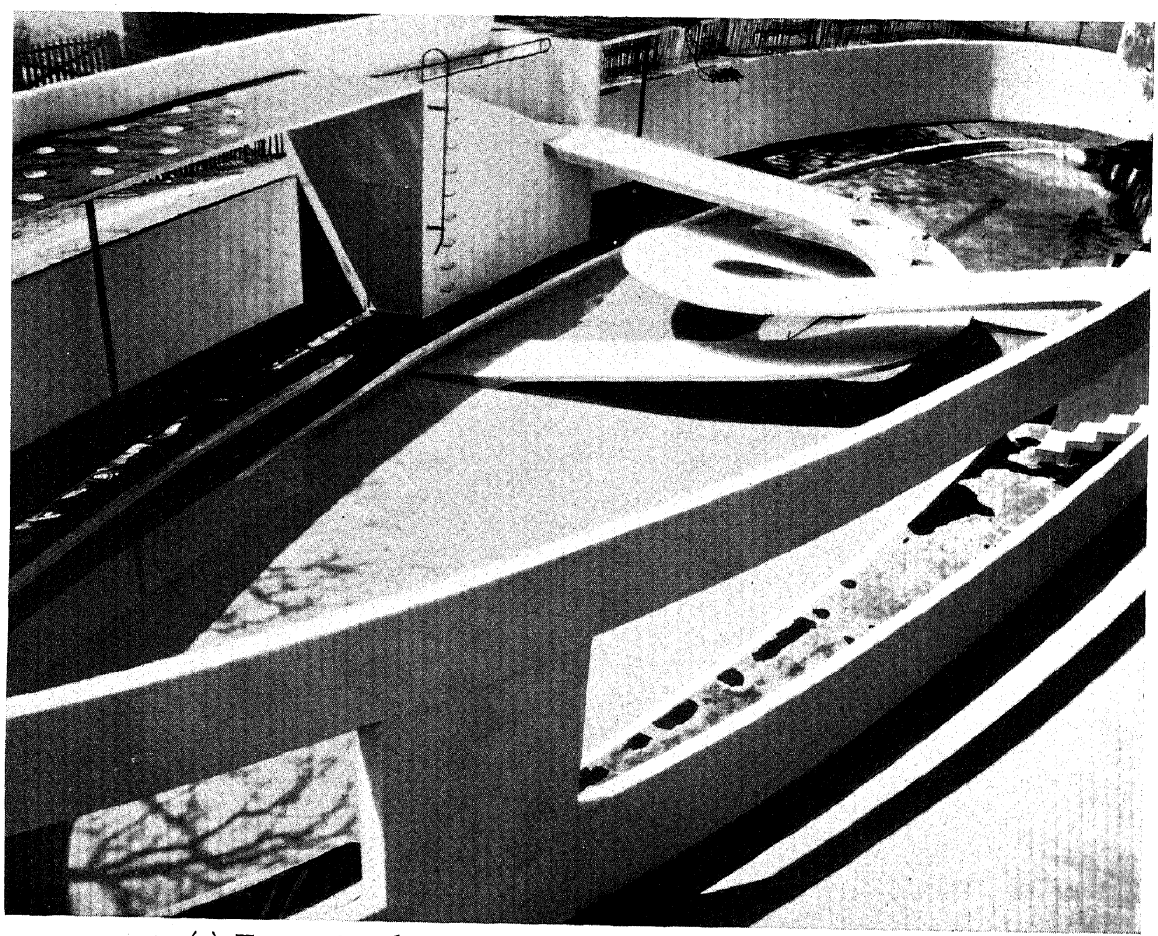
Ludwig Mies van der Rohe: Chicago, Ill., blocks of flats, 845–60 Lake Shore Drive, 1949–51



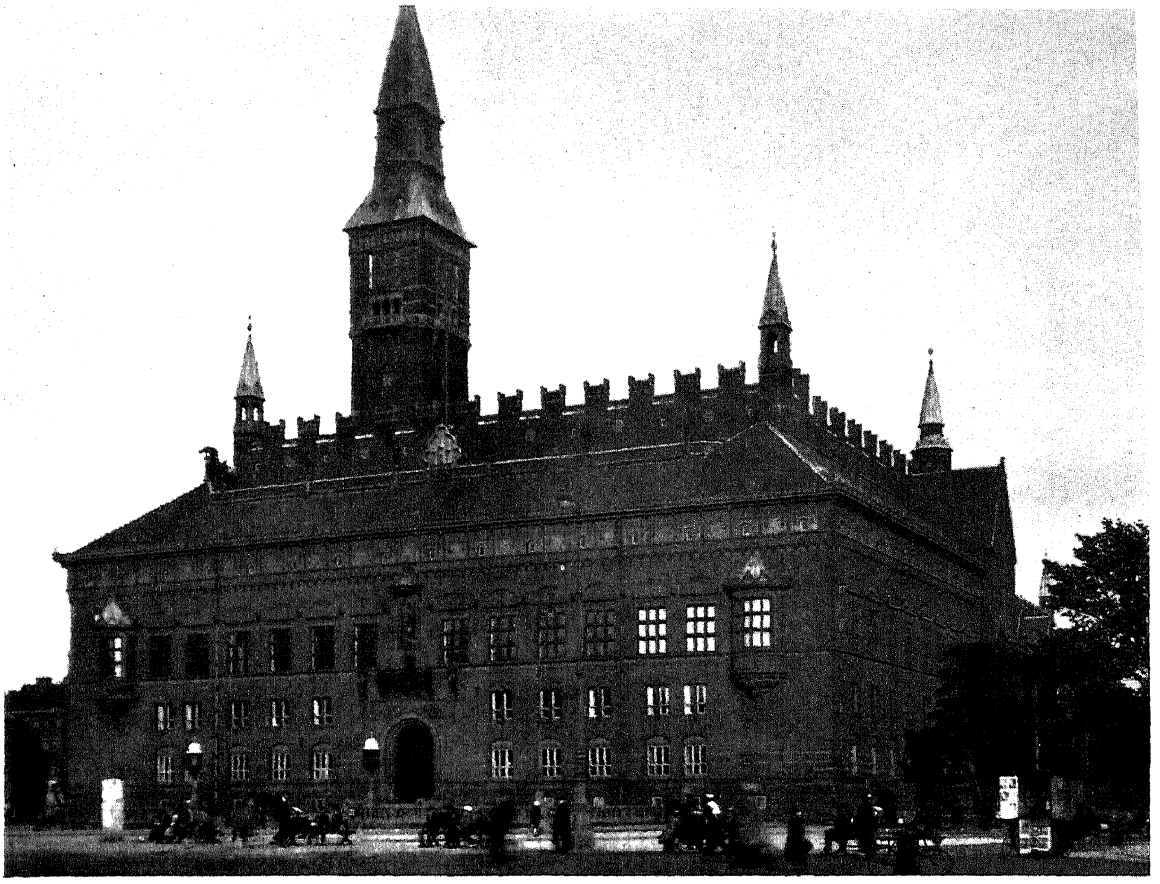
Lúcio Costa, Oscar Niemeyer, and others (Le Corbusier consultant): Rio de Janeiro, Ministry of Education and Health, 1937–43



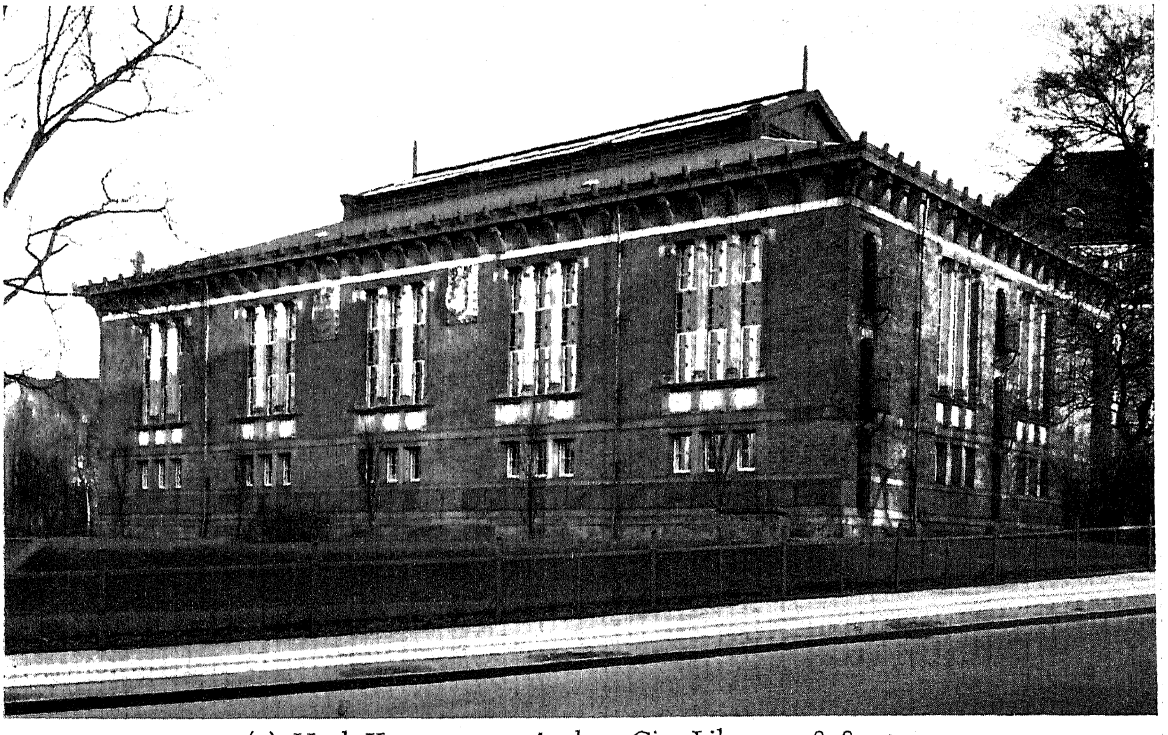
(A) Giuseppe Terragni: Como, Casa del Fascio, 1932–6



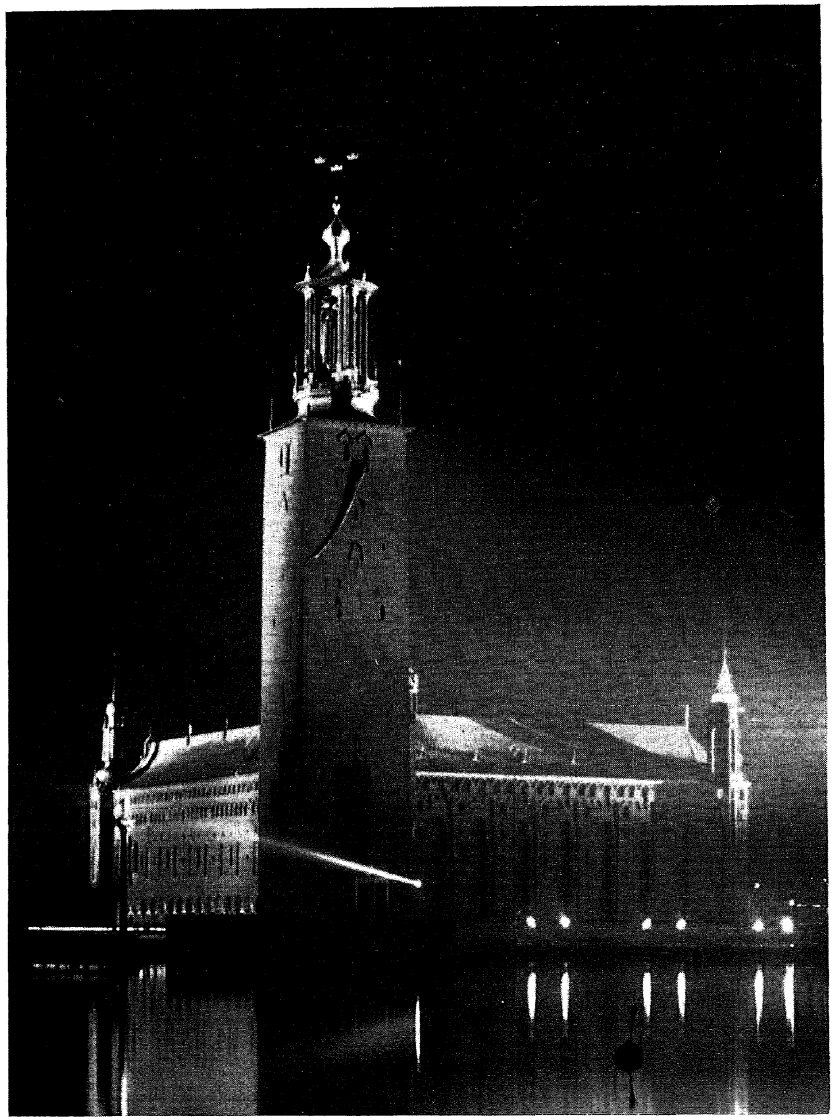
(B) Tecton: London, Regent's Park Zoo, Penguin Pool, 1933–5

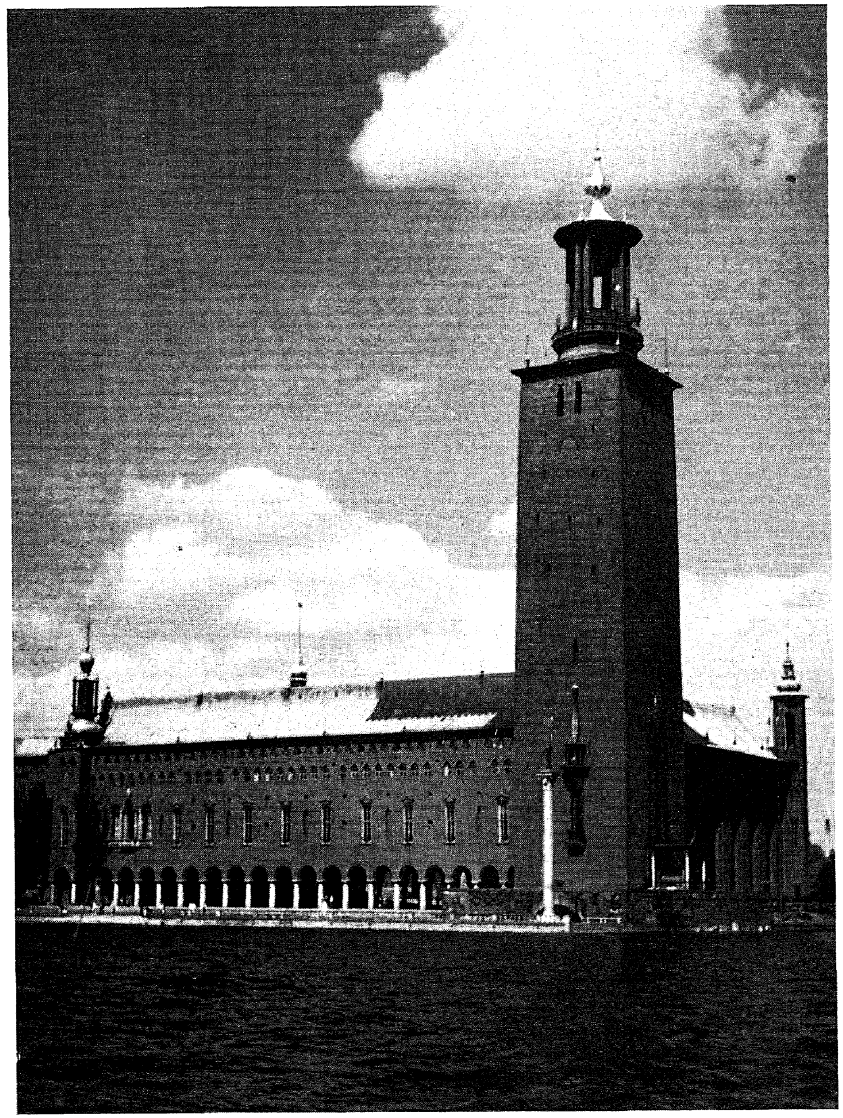


(A) Martin Nyrop: Copenhagen, Town Hall, 1893–1902

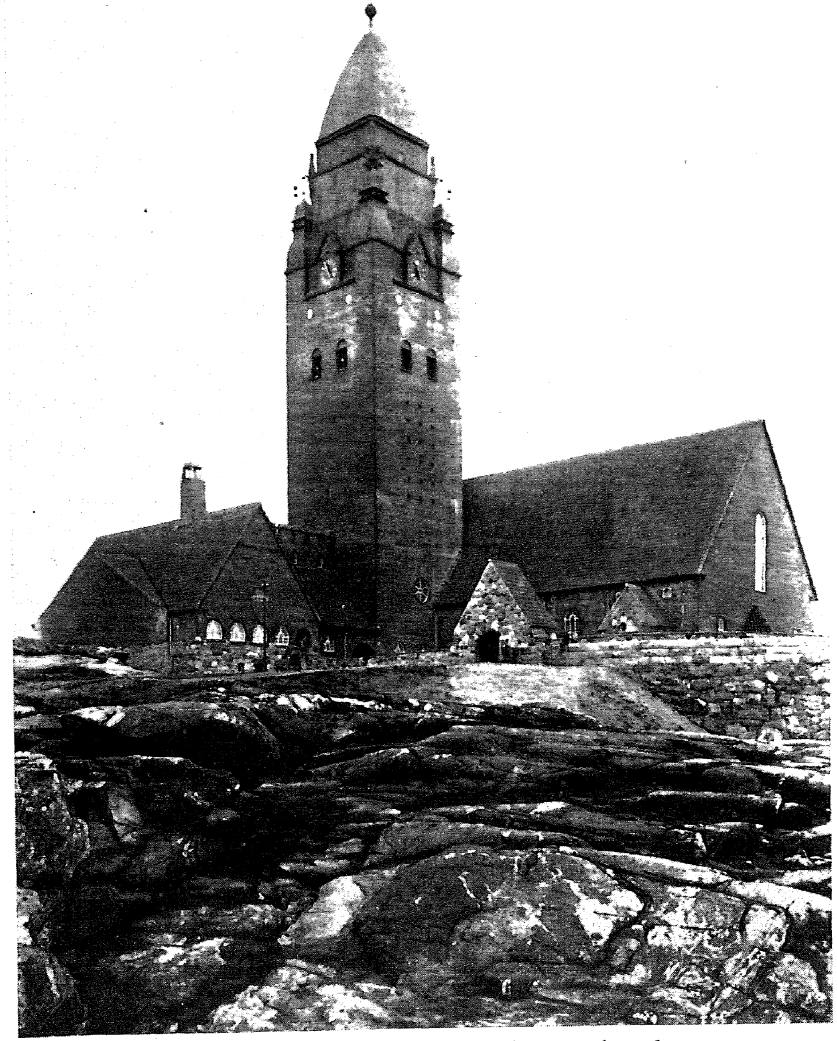


(B) Hack Kampmann: Aarhus, City Library, 1898–1902

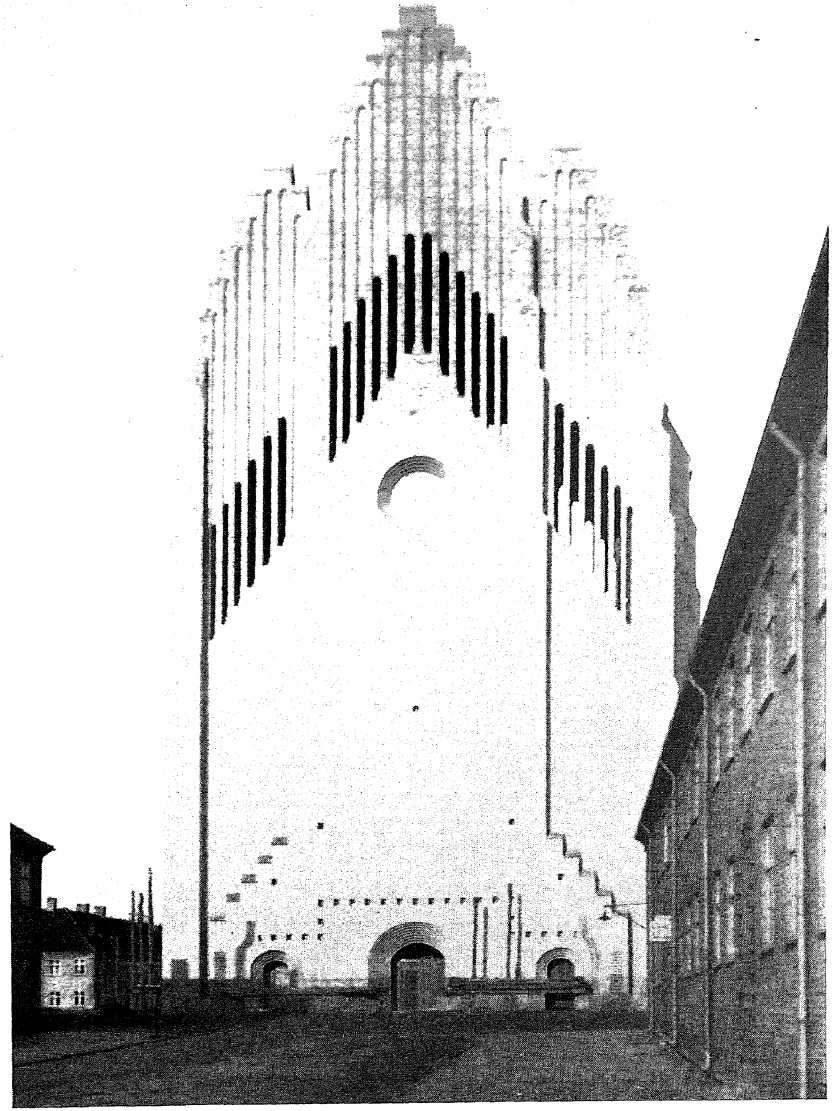




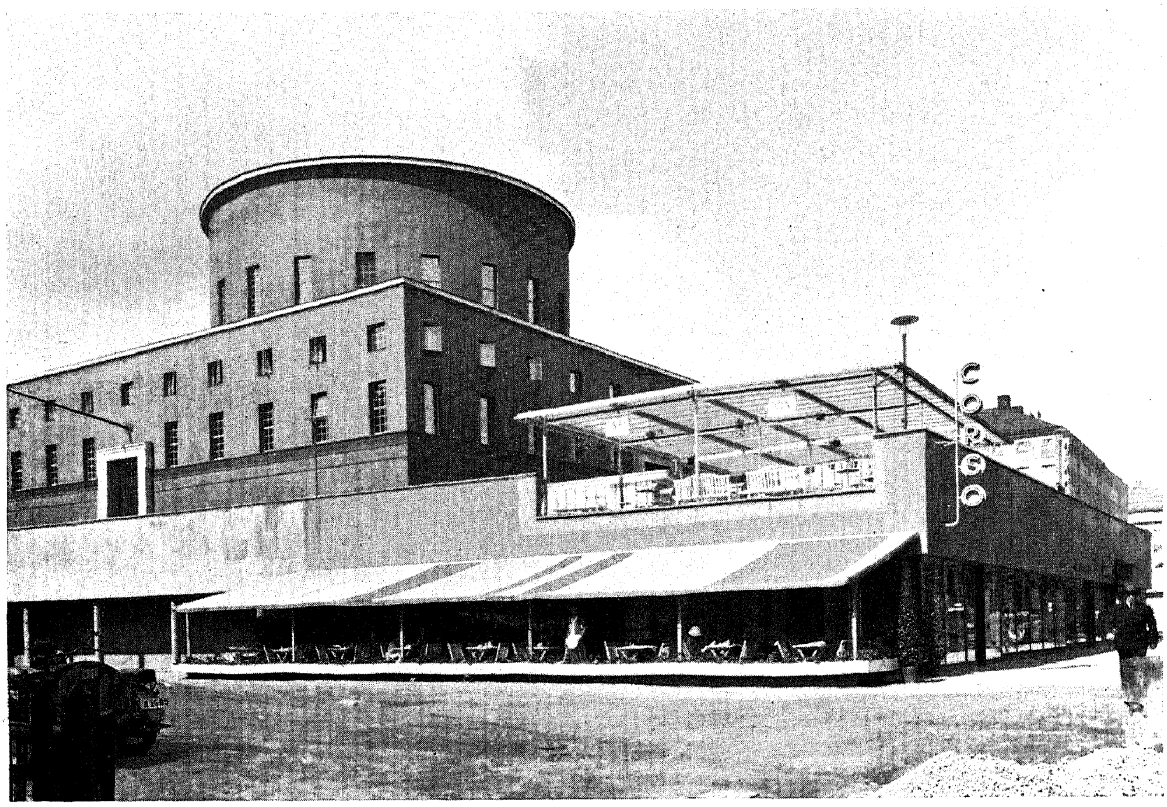
(A) and (B) Ragnar Östberg: Stockholm, Town Hall, 1909–23



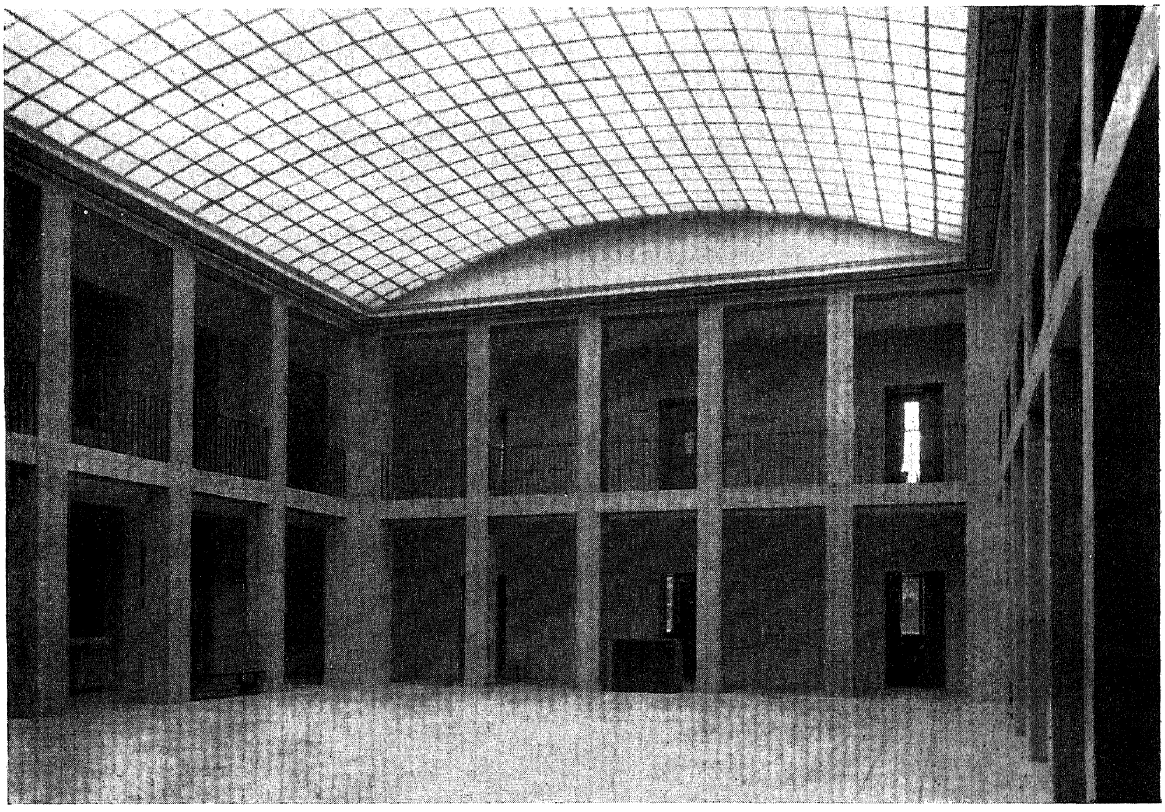
(A) Sigfrid Ericsson: Göteborg, Masthugg Church, 1910–14



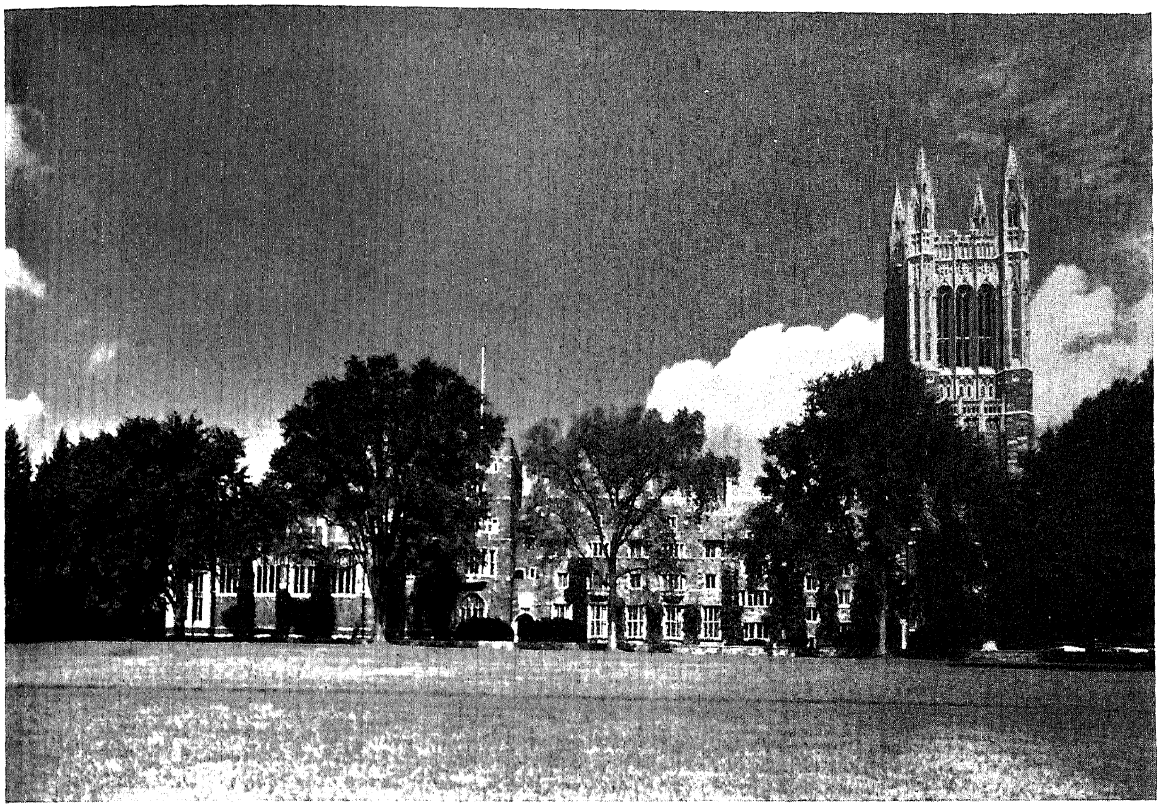
(B) P. V. Jensen Klint: Copenhagen, Grundvig Church, 1913, 1921–6



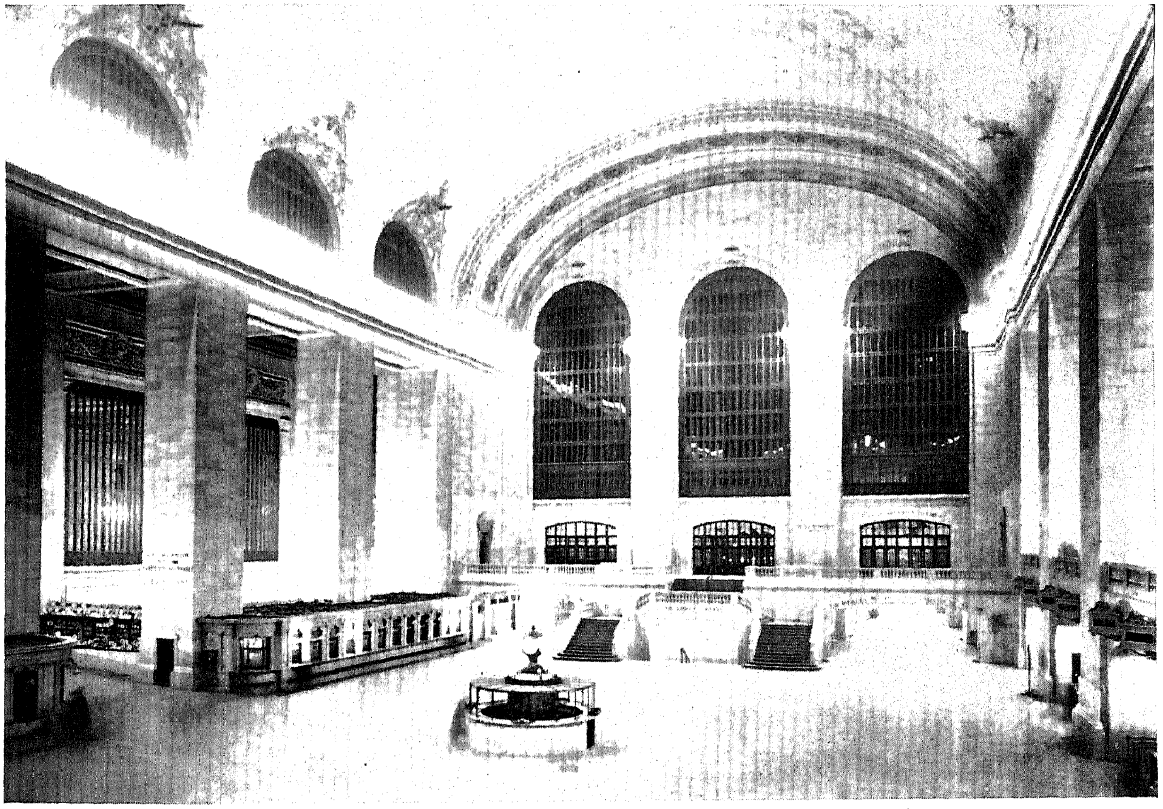
(A) E. G. Asplund: Stockholm City Library, 1921–8



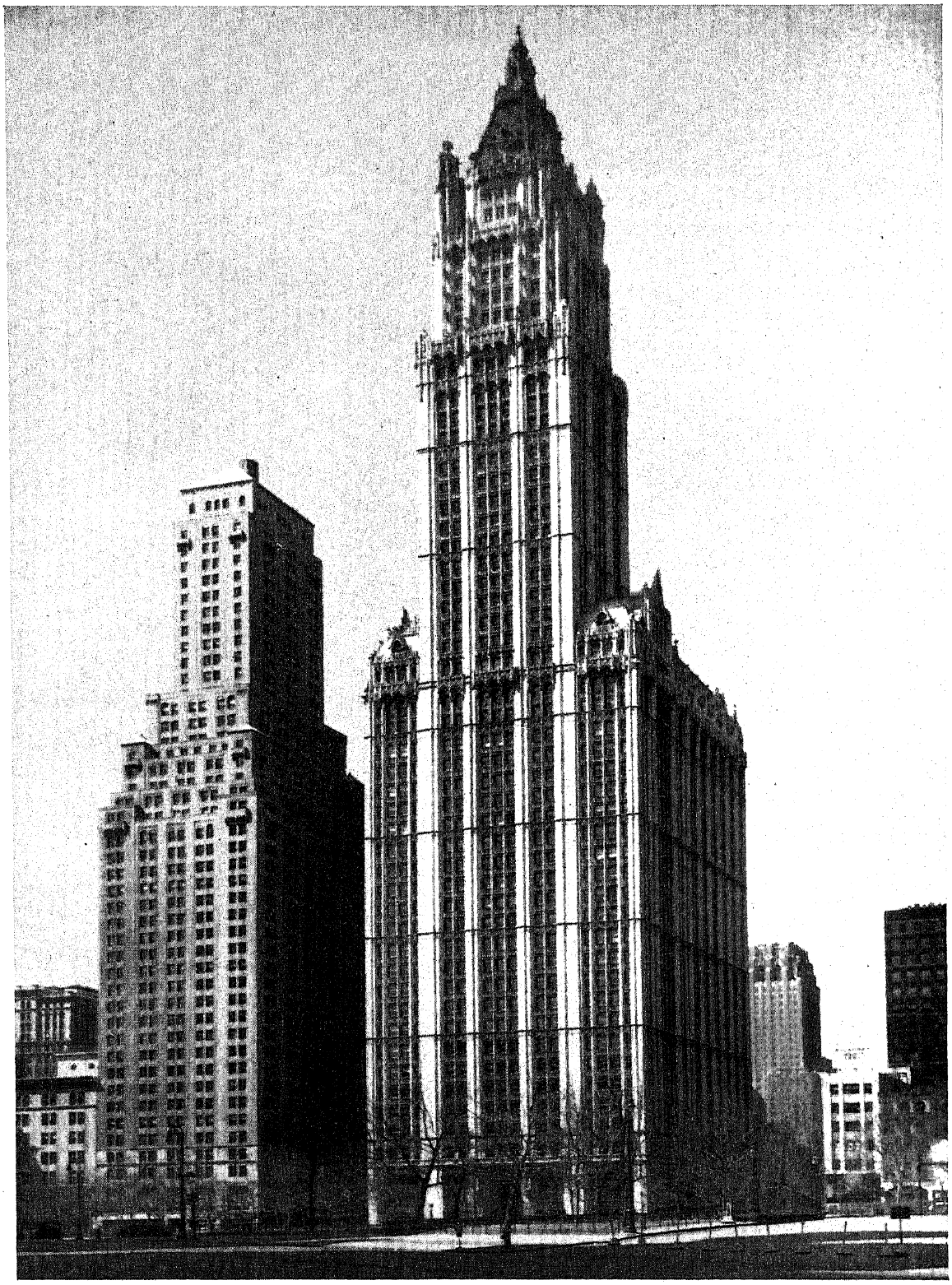
(B) Edward Thomsen and G. B. Hagen: Gentofte Komune, Øregaard School, 1923–4



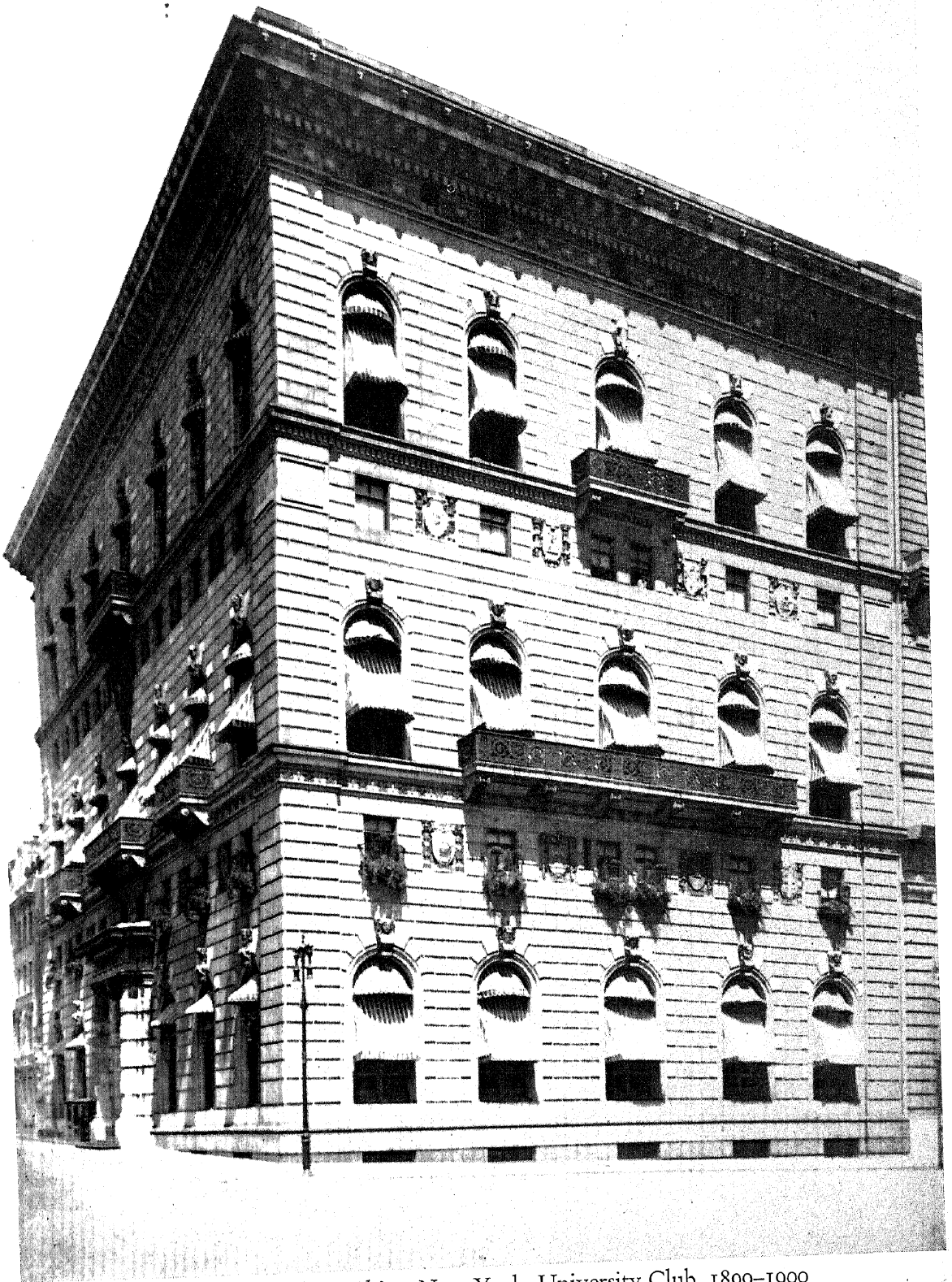
(A) Cram & Ferguson: Princeton, N.J., Graduate College, completed 1913



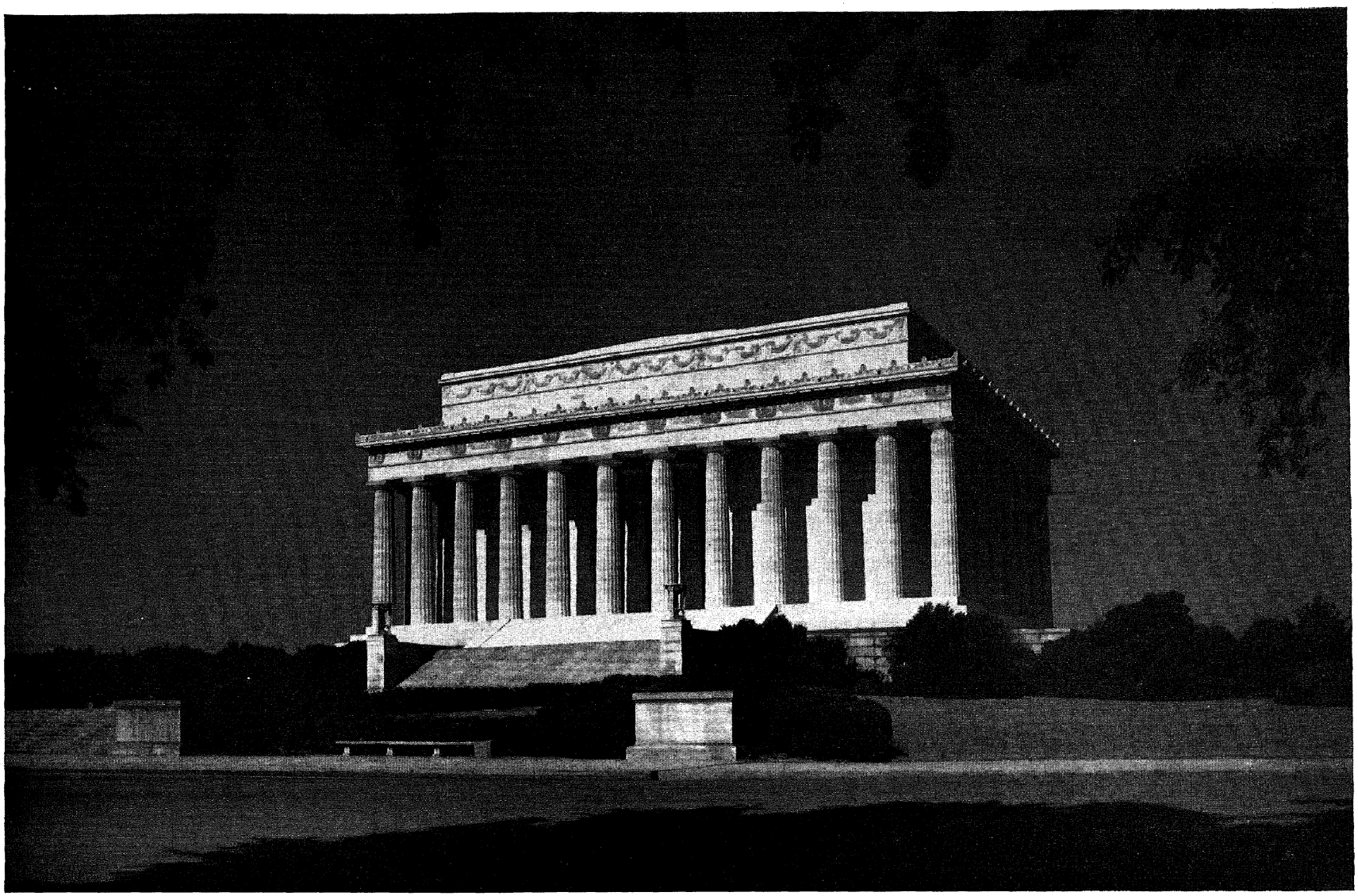
(B) Reed & Stem and Warren & Wetmore: New York, Grand Central Station, 1903–13



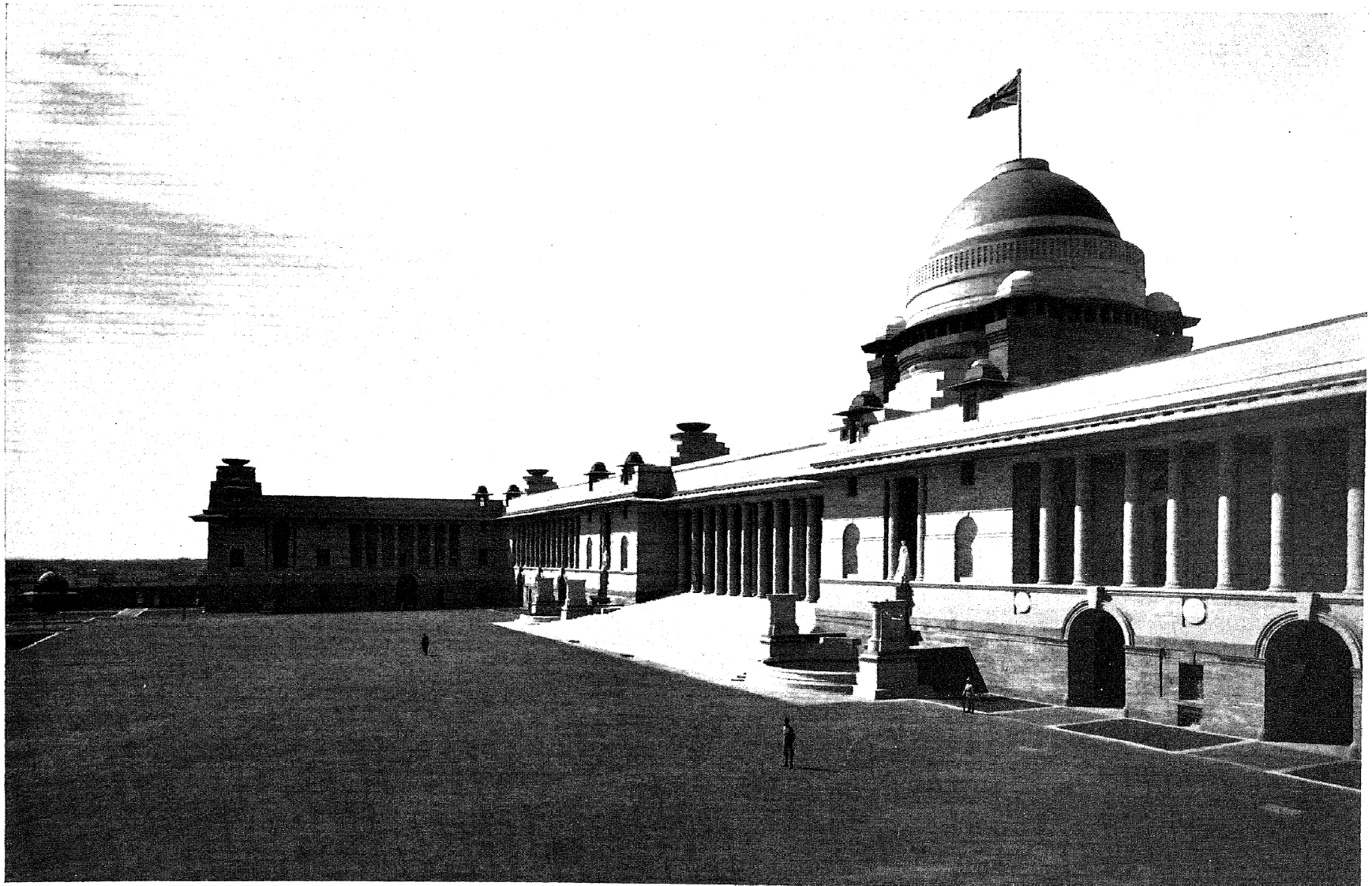
Cass Gilbert: New York, Woolworth Building, 1913



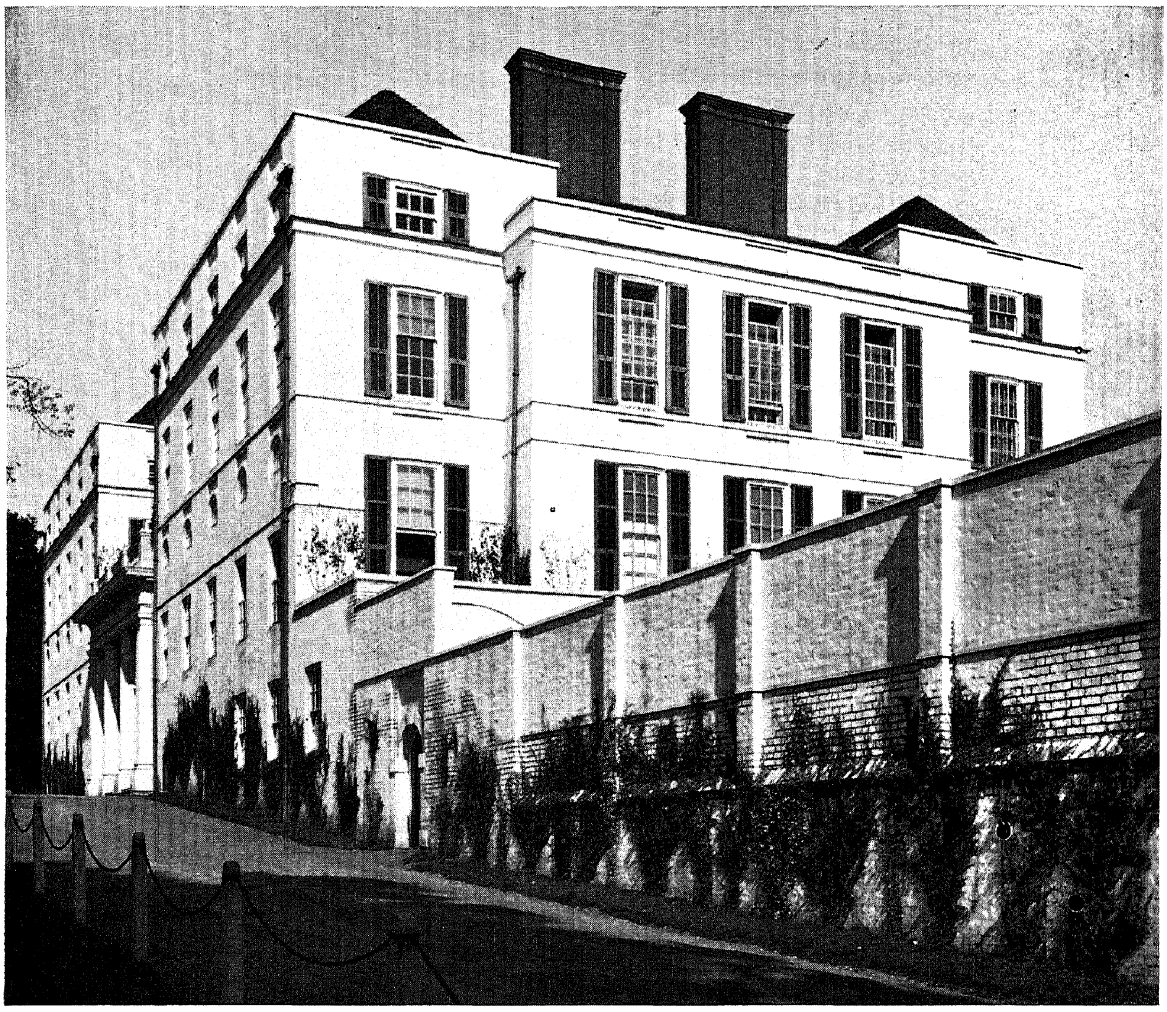
McKim, Mead & White: New York, University Club, 1899–1900



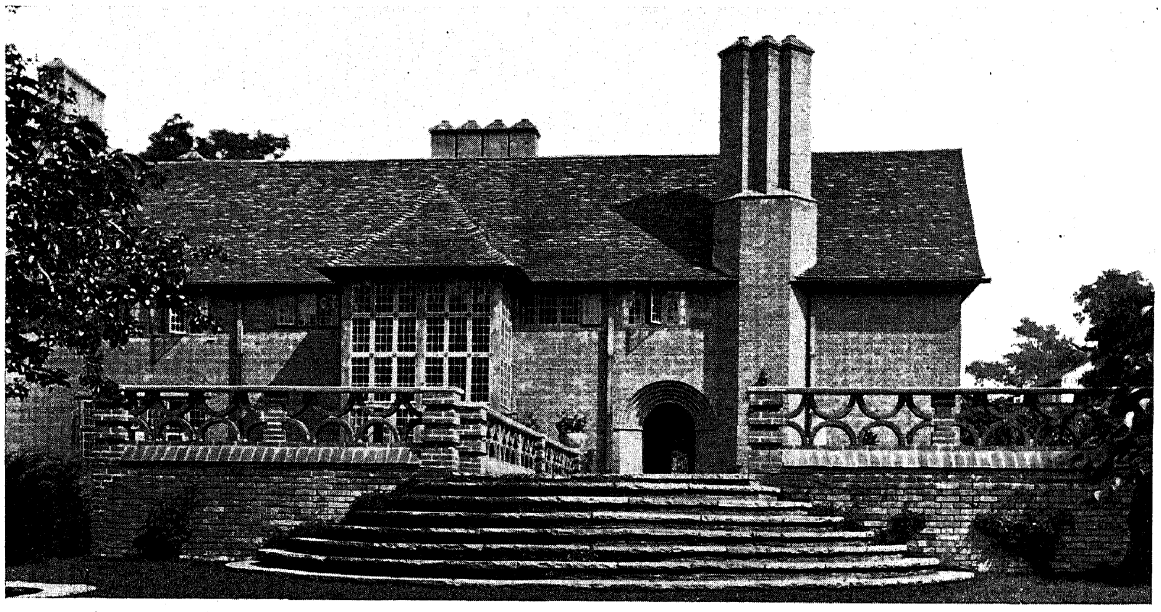
Henry Bacon: Washington, Lincoln Memorial, completed 1917



Sir Edwin Lutyens: Delhi, Viceroy's House, 1920–31. *Copyright Country Life*

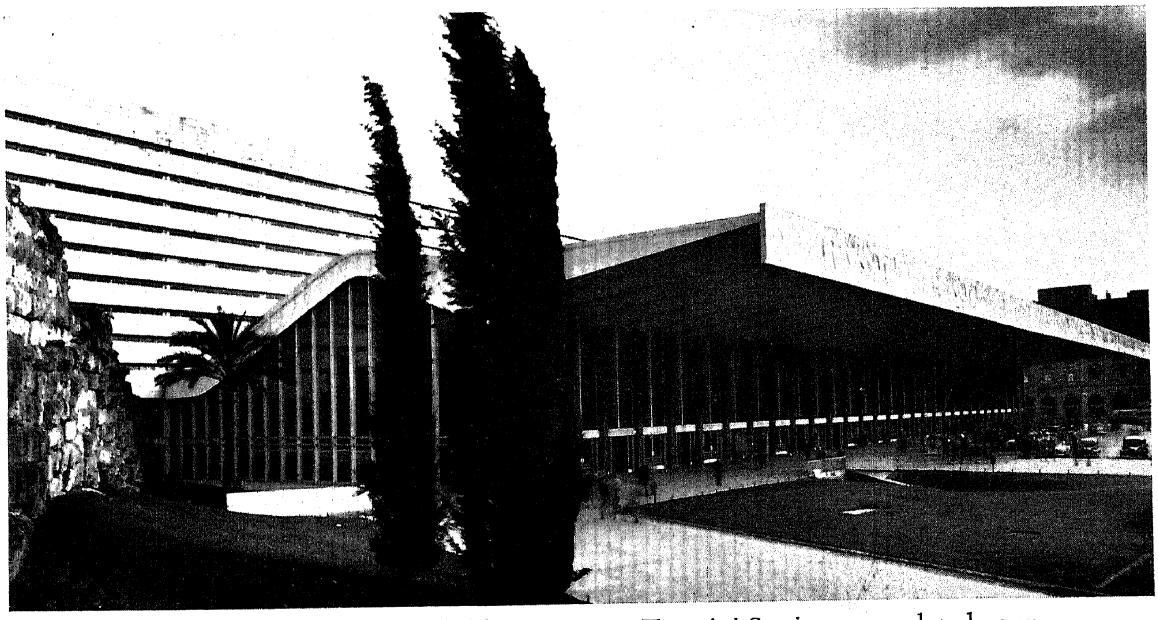


(A) Sir Edwin Lutyens: Taplow, Buckinghamshire, Nashdom, 1909. *Copyright Country Life*

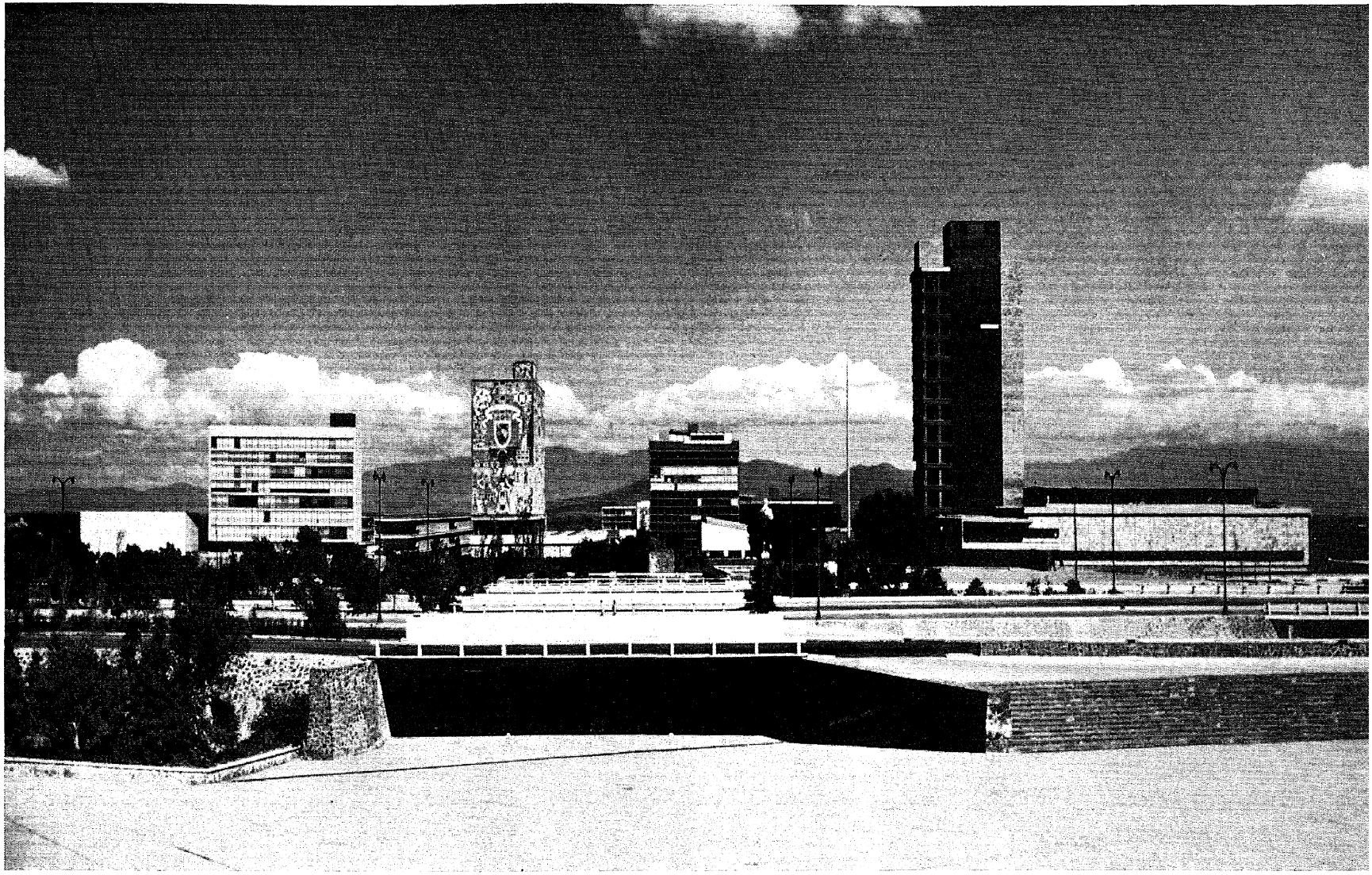


(B) Sir Edwin Lutyens: Sonning, Deanery Gardens, 1901. *Copyright Country Life*

(A) Victor Laloux: Paris, Gare d'Orsay, 1898–1900

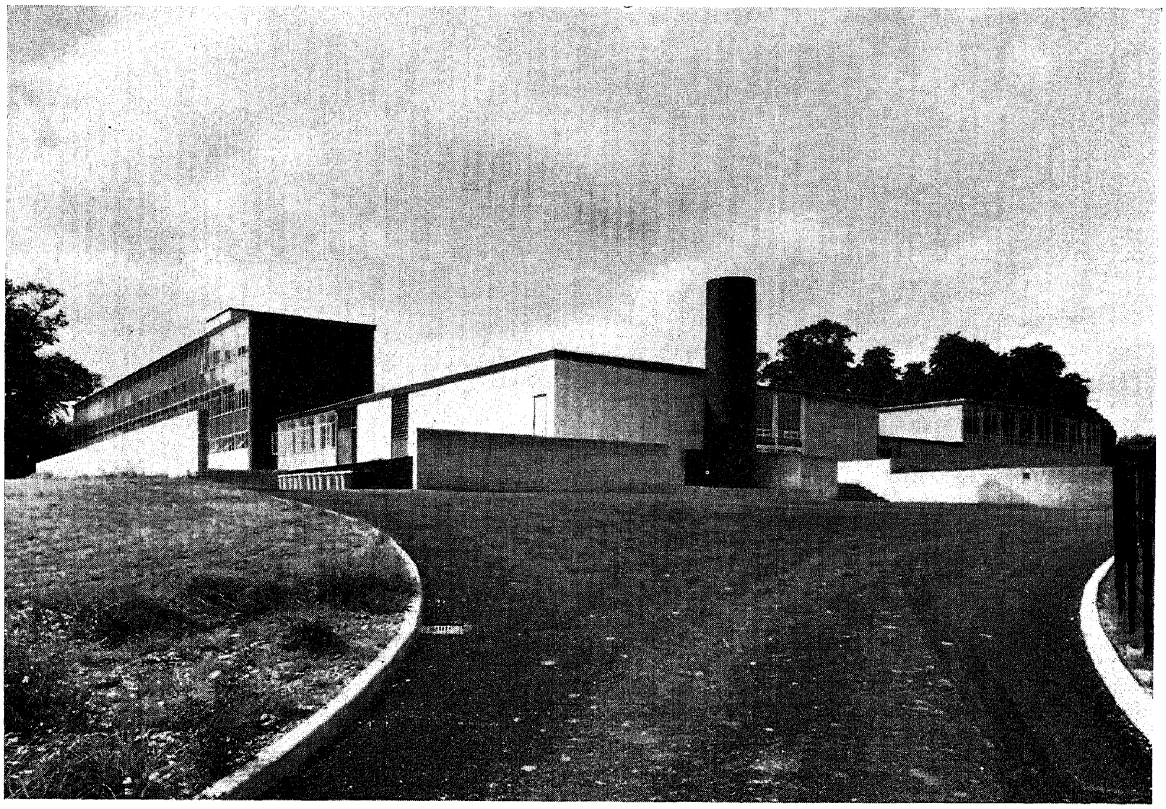


(B) Eugenio Montuori and others. Rome, Termini Station, completed 1951

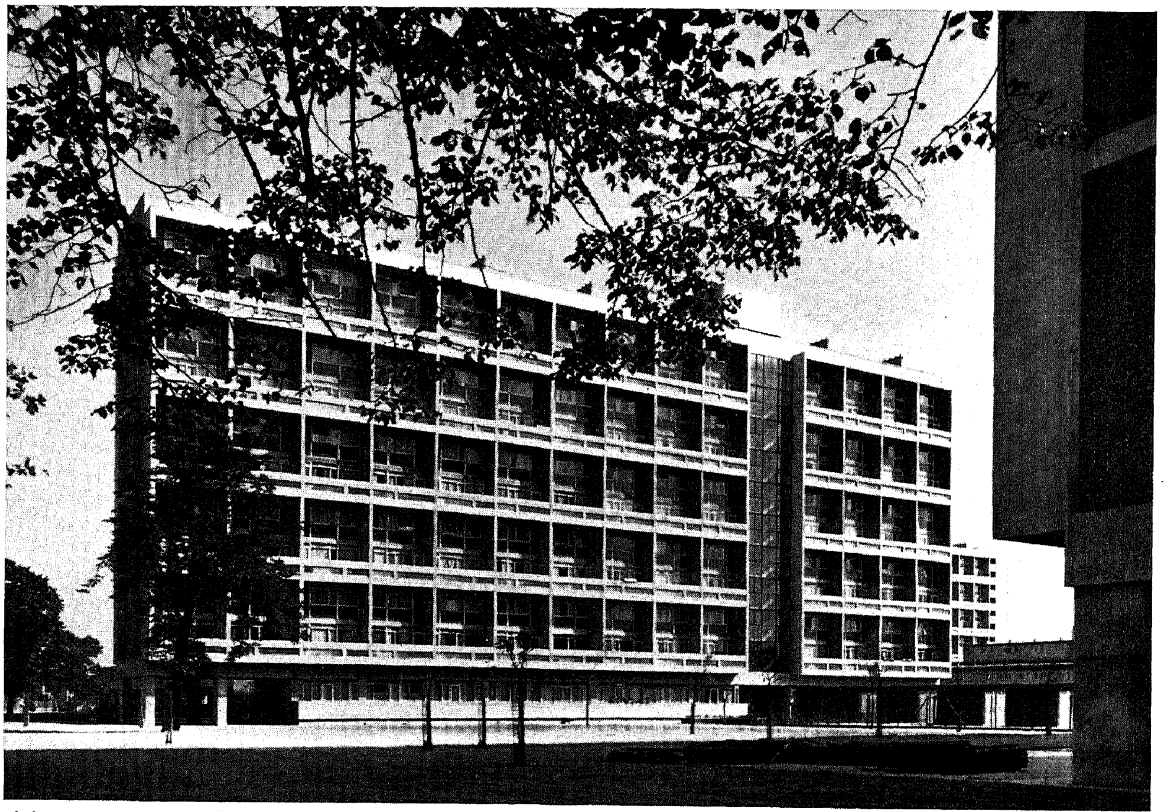


Carlos Lazo and others: Mexico City, University City, begun *c.* 1950

Kay Fisker and C. F. Møller: Aarhus, University, begun 1931

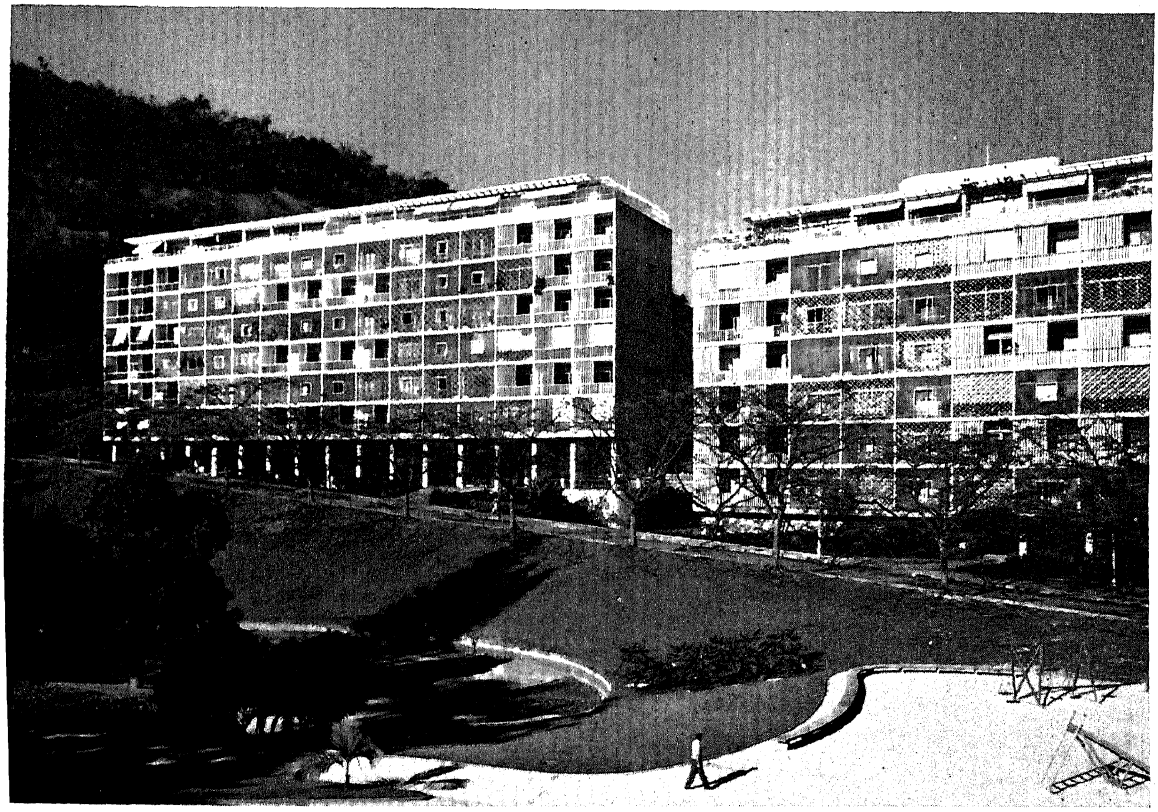


(A) James Cubitt & Partners: Langleybury, Hertfordshire, school, 1955–6

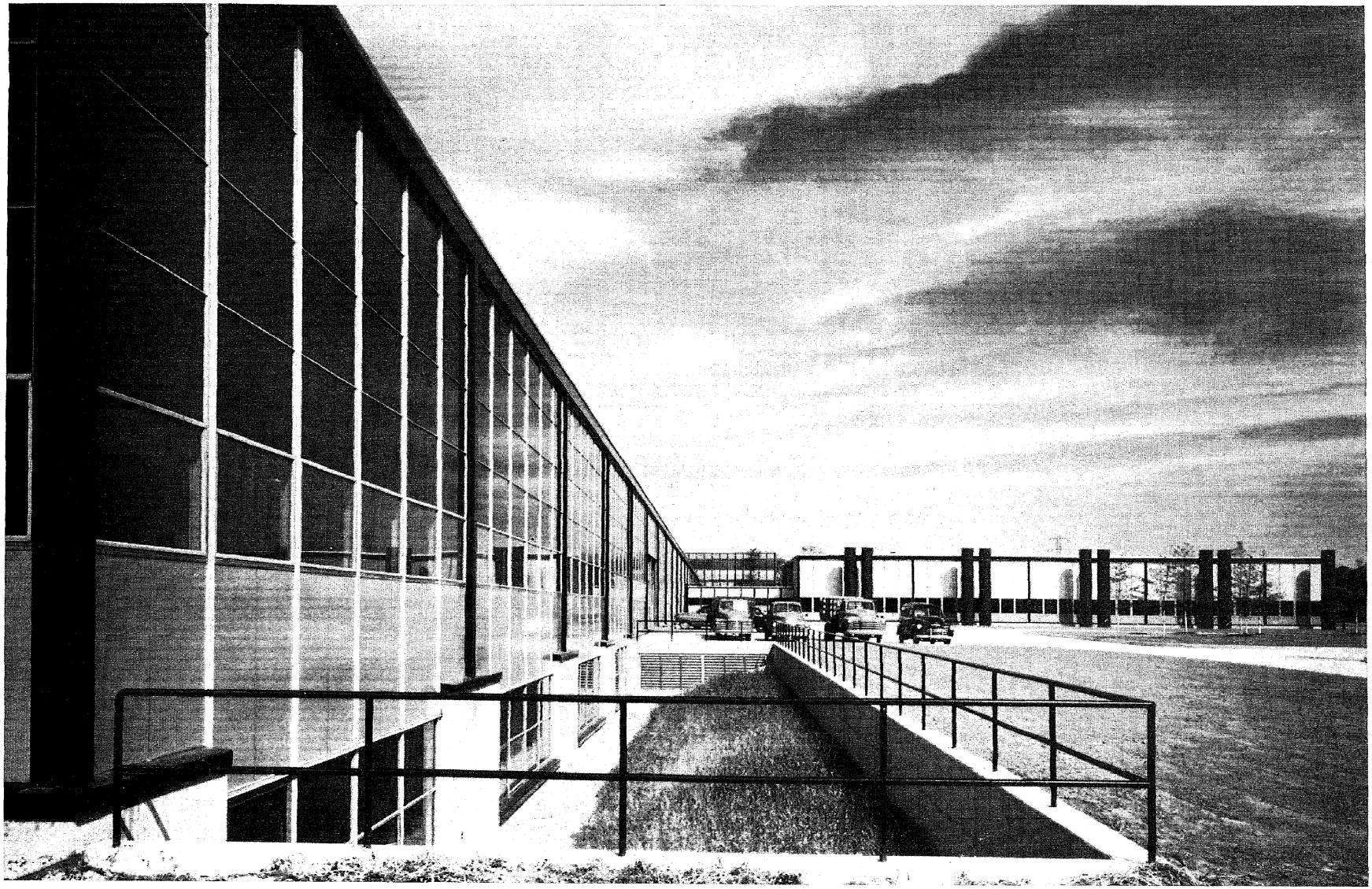


(B) London County Council Architect's Office: London, Loughborough Road Estate, 1954–6

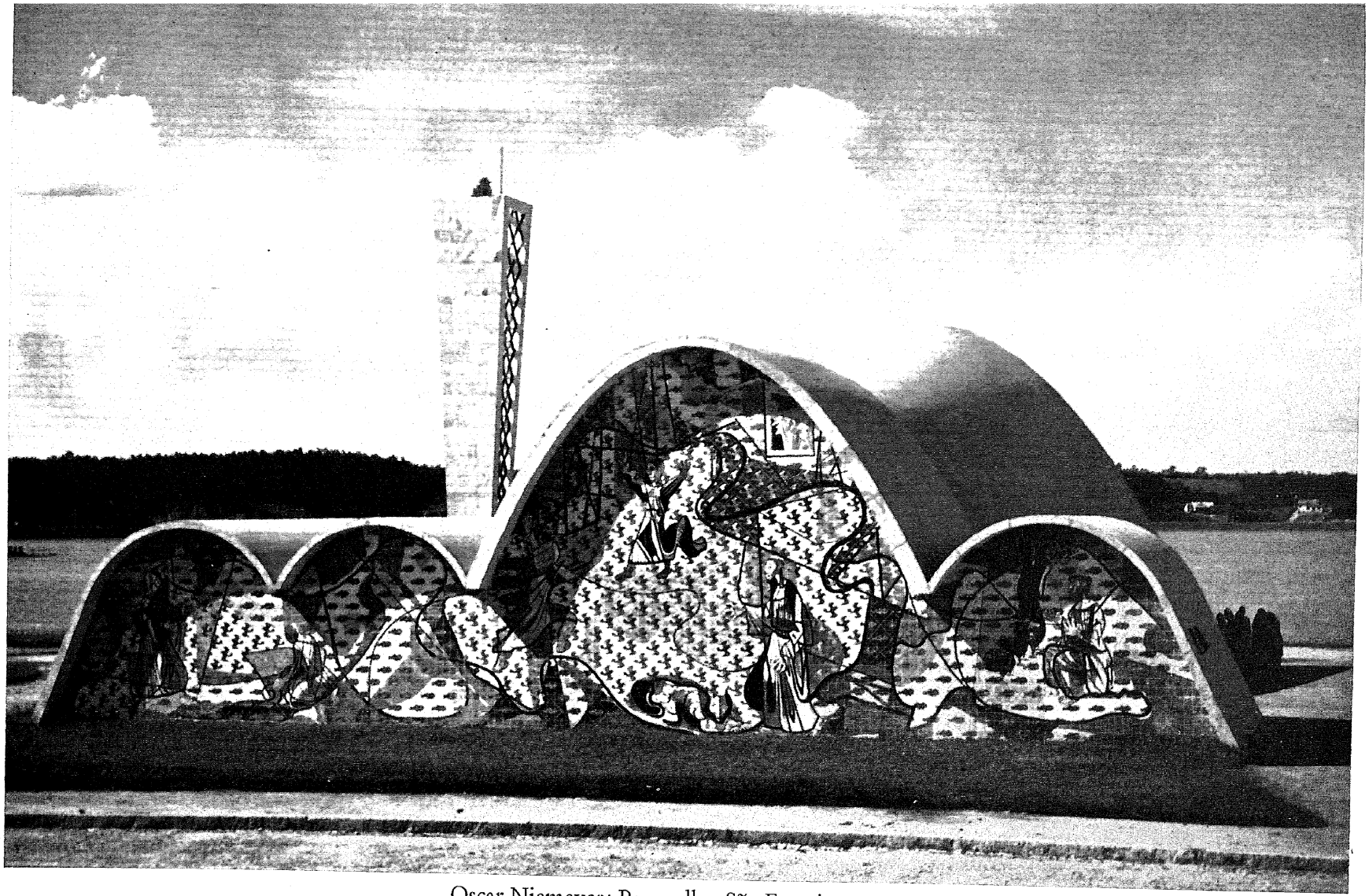
(A) Guido Bermudez: Caracas, Cerro Piloto housing estate, 1954



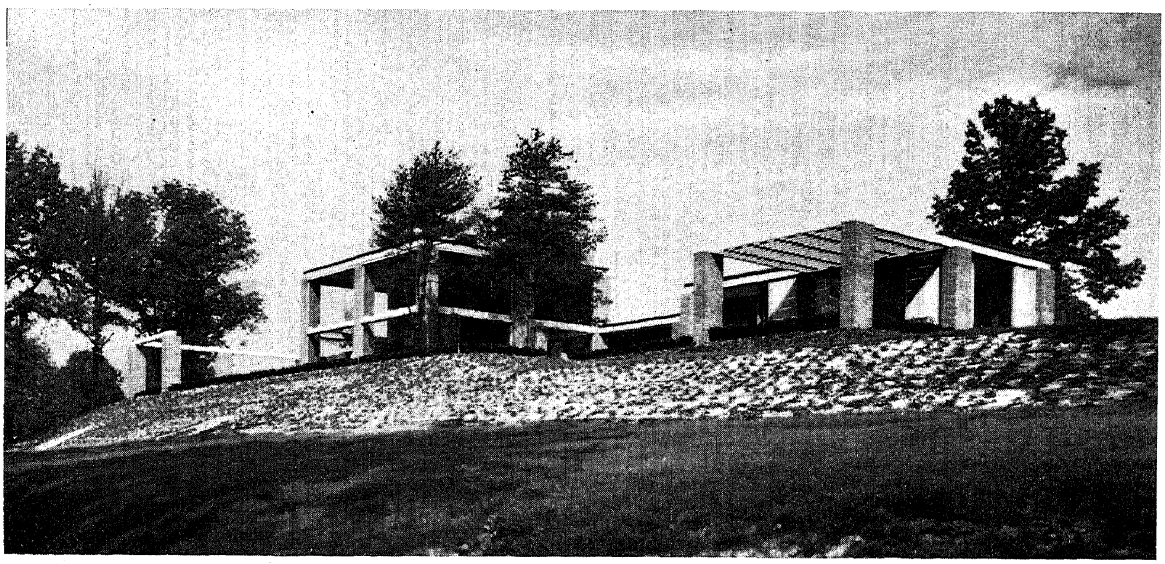
(B) Lúcio Costa: Rio de Janeiro, flats at Parque Guinle, 1948–54



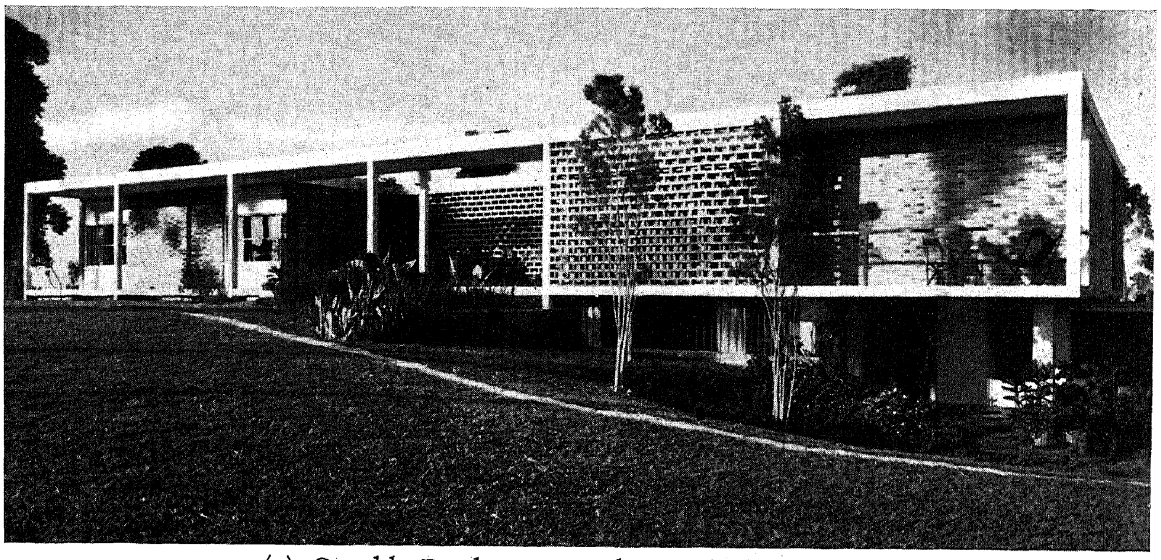
Eero Saarinen: Warren, Mich., General Motors Technical Institute, 1951–5



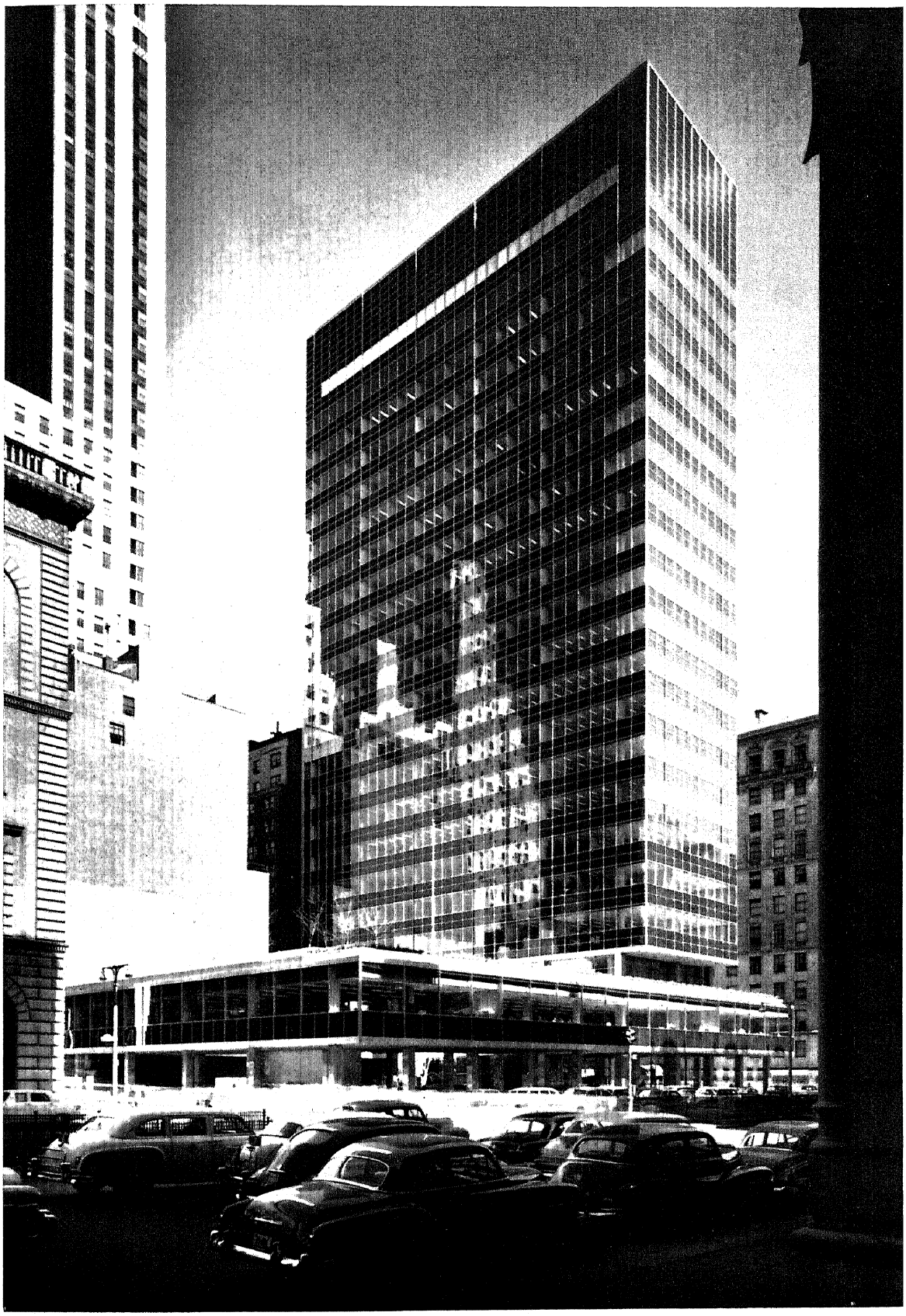
Oscar Niemeyer: Pampulha, São Francisco, 1943



(A) Philip C. Johnson: New Canaan, Conn., Boissonas house, 1955–6



(B) Osvaldo Bratke: São Paulo, Bratke house, 1953



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Numbers in *italics* refer to plates. References to the Notes are given only where they indicate matters of special interest or importance: such references are given to the page on which the note occurs, followed by the number of the chapter to which it belongs, and the number of the note. Thus 438(8)[21] indicates page 438, chapter 8, note 21.

The system followed in towns and cities is to print the name of the building first, followed where applicable by the name of the street in which it is located and by the district or suburb. Thus the White House, Tite Street, Chelsea, will be found in the main London entry under White House, and Saint-Jean-Baptiste, Neuilly, in the main Paris entry under Saint-Jean-Baptiste; each, however, is cross-referenced in the main index, as Chelsea, *see* London (White House). More remote suburbs generally have separate entries. Country houses are entered under their own names rather than under nearby towns and villages.

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